

000663

SHOWING IN  
APPLICANT EXHIBIT  
1B

# FLOODBREAK

Floodbreak is a flood barrier that automatically rises in times of flooding to protect your property. It can be placed in front of any opening and be designed for any flood water level.

Floodbreak resembles a hinged box that is recessed into the ground in front of the opening. Because it is recessed, it lays completely flat to the surrounding area, allowing unrestricted access at all times. It has been engineered for extreme loads. Example: Floodbreak is able to withstand the weight of a fully loaded truck driving over it. The top of the barrier can be covered with almost any finish material, making it blend in with the surrounding areas.

The greatest attribute of this product is that the flood water makes it work.

There is no human or electrical input needed for this system to operate. Its operation is very simple.

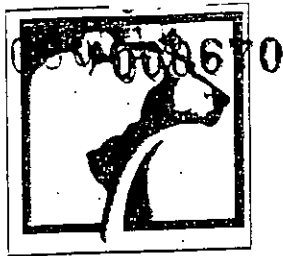
The recessed box is attached to the local storm drainage system, which allows normal rain accumulation to simply drain away. When the storm drain systems have filled up, the box can no longer drain and water starts to accumulate. As the water rises in the box, the buoyancy of the lid starts to lift the barrier. Rubber flanges on the sides and at the hinge prevent water from passing around the barrier. The barrier will rise with the water and will lower as the water recedes.



000669

## FLOOD BARRIER PROJECT LIST

(FLOOD BARRIER STATION 11 - 12 - 13)



# Unlimited Applications, Inc

7077 Southwest 46th Street • Miami • Florida • 33133  
Phone (305) 663-9333 • C.C. 93BS00433 • Fax (305) 663-0603

## UA PROJECT LIST

[www.floodbarrier.com](http://www.floodbarrier.com)

Here is a list of some of our flood barrier projects completed (over \$ 5,000.00). If you need a complete list of all our project, please let me know. You will notice that our this list shows a mix of new construction and retrofits. Most of the contractors listed are well know and established.

**Project:** Williams & Sonoma  
**Address:** 1035 Lincoln Road  
Miami Beach, Florida

**Contractor:** Fisher Development  
1485 Bayshore Drive  
San Francisco, California

**Project:** Portofino Retail Space  
**Address:** 500 South Pointe Drive  
Miami Beach, Florida

**Contractor:** Fisher Development  
1485 Bayshore Drive  
San Francisco, California

**Project:** BeBe Clothes  
**Address:** 1025 Lincoln Road  
Miami Beach, Florida

**Contractor:** Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

**Project:** Eastview Hotel  
**Address:** 1516 Washington Avenue  
Miami Beach, Florida

**Contractor:** Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

**Project:** Portofino Office Center  
**Address:** 404 Washington Avenue  
Miami Beach, Florida

**Contractor:** Miller Solomon Construction  
8491 N.W. 17th Street  
N. Miami, Florida

**Project:** Pottery Barn  
**Address:** 1045 Lincoln Road  
Miami Beach, Florida

**Contractor:** Fisher Development  
1485 Bayshore Drive  
San Francisco, California

**Project:** Quittner Building  
**Address:** 532-543 Lincoln Road  
Miami Beach, Florida

**Contractor:** Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

**Project:** Polo Sport  
**Address:** 740 Collins Avenue  
Miami Beach, Florida

**Contractor:** Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

**Project:** Club Monaco Clothiers  
**Address:** 624 Collins Avenue  
Miami Beach, Florida

**Contractor:** Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

**Project:** 711 Retail Space  
**Address:** 711 Washington Avenue  
Miami Beach, Florida

**Contractor:** Ragosa Engineering  
46 N.W. 36 Street  
Miami, Florida

000671  
Project: Sphora Shop  
Address: 721 Collins Avenue  
Miami Beach, Florida

Contractor: Spectrum Builders  
1231 S.W. 132 Court  
Miami, Florida

Project: Stanley Meyers Clinic  
Address: 1221 71st Street  
Miami Beach, Florida

Contractor: Pino-Fonticella Construction  
1140 W. Flagler Avenue  
Miami, Florida

Project: Ballet Villet Parking & Shops  
Address: 700 Block Collins Avenue  
Miami Beach, Florida

Contractor: Goldman Properties  
804 Ocean Drive  
Miami Beach, Florida

Project: Alton Road Retail Center  
Address: 1570 Alton Road  
Miami Beach, Florida

Contractor: Art Construction Company  
349 Greco Avenue  
Coral Gables, Florida

Project: West Avenue Parking Garage  
Address: 1000 West Avenue  
Miami Beach, Florida

Contractor: Whiting Turner Construction  
1000 Corporate Drive  
Fort Lauderdale, Florida

Project: Biscayne Village  
Address: 1901 Biscayne Blvd.  
Miami, Florida

Contractor: Chase Construction  
8491 N.W. 17th Street  
Miami, Florida

Project: Bayshore Golfcourse  
Address: 2500 Bayshore Drive  
Miami Beach, Florida

Contractor: Tran Construction  
505 Lincoln Road  
Miami Beach, Florida

Project: Nathan Rainer Building  
Address: 1026-36 Lincoln Road  
Miami Beach, Florida

Contractor: DA Construction  
1551 N.W. 82nd Avenue  
Miami, Florida 33126

Project: Ameritrust Bank  
Address: 447 41st Avenue  
Miami Beach, Florida

Contractor: Glace & Company  
1006 N. Federal Highway  
Lake Worth, Florida

Project: Multi-Use Building  
Address: 763 Collins Avenue  
Miami Beach, Florida

Contractor: Goldman Properties  
804 Ocean Drive  
Miami Beach, Florida

Project: City National Bank  
Address: 475 41st Street  
Miami Beach, Florida

Contractor: Waas, Phillips, Adler  
1400 N.W. 107th Avenue  
Miami, Florida

Project: Atlantic Center  
Address: 119 Washington Avenue  
Miami Beach, Florida

Contractor: Buildtech, LLC  
407 Lincoln Road  
Miami Beach, Florida

Project: Home Depot  
Address: 4000 Route # 4  
Keene, New Hampshire

Contractor: R.L. Spencer  
222 Highbridge Street  
Fayetteville, North Carolina

Project: Minute Man, Inc  
Address: 804 S. Redding Road  
Birmingham, Alabama

Contractor: Oil Equipment Company  
555 South Avenue, #4  
Birmingham, Alabama

(shown in ID)

Project: 000682 Rivertowne Country Club  
Address: 8555 Rivertowne Road  
Mount Pleasant, North Carolina

Contractor: Centex Construction  
3001 Rivertown Parkway  
Mount Pleasant, North Carolina

Project: The Shops At South Beach  
Address: 500 Collins Avenue  
Miami Beach, Florida

Contractor: Suffolk Construction  
515 N. Flagler Road  
West Palm Beach, Florida

Project: The Ratner Building  
Address: 1023-1036 Lincoln Road  
Miami Beach, Florida

Contractor: Groden Stamp Construction  
65 N.W. 168th Street  
N. Miami Beach, Florida

Project: Reyos Del Sol  
Address: 185 N.W. 13th Avenue  
Miami, Florida

Contractor: Deliant Construction  
7380 N.W. 77th Court  
Miami, Florida

Project: War Veteran's Field House  
Address: 556 Route 856  
Huntington, Pennsylvania

Contractor: Poole Anderson Construction  
Box 576  
Huntington,

Project: Levi Shop  
Address: 826 Collins Avenue  
Miami Beach, Florida

Contractor: Brodson Construction  
167 NE 39th Street  
Miami, Florida

Project: Vip Honda  
Address: North Plainfield, NJ  
Downtown

Contractor: One Key Construction  
Brooklyn, NY

Project: Outback Steakhouse  
Address: Clearwater Beach Road  
Clearwater, Florida

Contractor: Venture Construction  
15 N. Falkenberg Road  
Tampa, Florida

Project: The Cosmopolitan  
Address: 122 Washington Avenue  
Miami Beach, Florida

Contractor: Suffolk Construction  
515 N. Flagler Road  
West Palm Beach, Florida

Project: Summit Brickell  
Address: 1200 S. Miami Avenue  
Miami, Florida

Contractor: Bovis Lend Lease  
1200 S. Miami Avenue  
Miami, Florida

Project: Ballast Pointe Park  
Address: 1500 Interbay Drive  
Tampa, Florida

Contractor: La Chase Construction  
1025 Oak Avenue  
Tampa, Florida

Project: The Solara Spa & Resort  
Address: 8801 Collins Avenue  
Miami Beach, Florida

Contractor: Welbro Construction  
800 Trafalgar Court  
Orlando, Florida

Project: Mary Brickell Village  
Address: South Miami Ave.  
2nd Street, Miami

Contractor: Bovis Lend Lease  
1200 S. Miami Avenue  
Miami, Florida

Project: Met One  
Address: 100 Biscayne Blvd.  
Downtown Miami

Contractor: Suffolk Construction  
515 N. Flagler Road

000673

**Project:** Il Lugano  
**Address:** 333 NE 32nd Avenue  
Fort Lauderdale, FL 33308

**Contractor:** Moss and Associates  
228 SE 12th Avenue  
Ft. Lauderdale, FL 33301

**Project:** The Meridian  
**Address:** 2000 Meridian Ave.  
Miami Beach, FL 33139

**Contractor:** Kauffman Lynn  
2151 N.W. Boca Raton Blvd.  
Suite 100  
Boca Raton, FL 33431

**Project:** Seybold Pointe Condominium  
816 N.W. 11th Street

**Contractor:** Delant Construction  
7380 N.W. 77th Court  
Miami, Florida 33165

**Project:** Sea Forest Beach Club  
**Address:** Exercise Room  
New Port Richie, Florida 34652

**Contractor:** Quality Reconstruction  
5600 Sea Forest Drive  
New Port Richie, Florida 34652

West Palm Beach, Florida

**Project:** Telefutura Television Station  
**Address:** 145 NW 89th Place  
Miami, FL 33166

**Contractor:** J.E Gamas  
4241 Palm Lane  
Miami, Florida 33147-3346

**Project:** Brac Informatics Centre  
**Address:** 2100 Island Drive  
Cayman Brac, Cayman Islands

**Contractor:** Brac Informatics Centre  
2100 Island Drive  
Cayman Brac, Cayman Islands

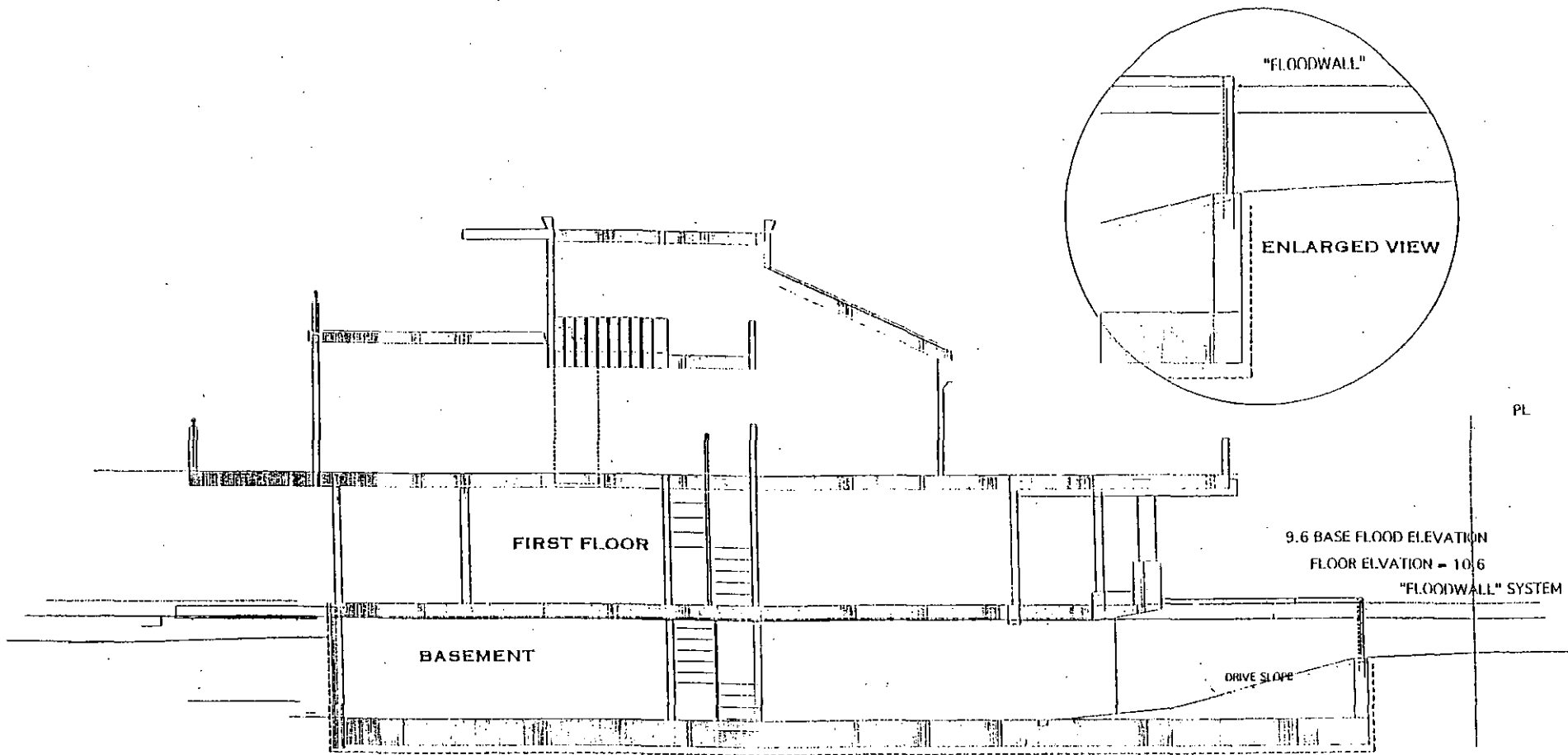
**Project:** Digital Process Center  
13525 N.W. 25th Street  
Miami, FL 33165

**Contractor:** J.E Gamas  
4241 Palm Lane  
Miami, Florida 33147-3346

000674

# SLAT SYSTEM DIAGRAM, INFO &PROJECT LIST

# SLAT SYSTEM



CROSS SECTION

FULL "FLOODPROOFING" OF BASEMENT PER SECTION 1-C

000675

EXHIBIT 2-B



SLAT SYSTEM

"FLOODWALL" SYSTEM BARRIER

PL

DRIVEWAY

PROPOSED RESIDENCE

SITE

INDICATES EXTENT OF FULL HEIGHT "FLOODPROOFING OF BASEMENT  
AND RETAINING WALLS TO 1'-0" ABOVE  
BASE FLOOD LEVEL 9.6

EXHIBIT 2-A

000676

LB

000677



FLOOD CONTROL AMERICA

ABOUT THE IFCW

PROJECTS

INSTALLATION MAP

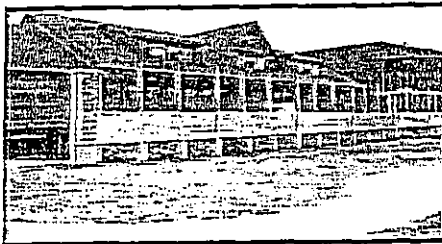
FAQ

ABOUT FCA

PRESS

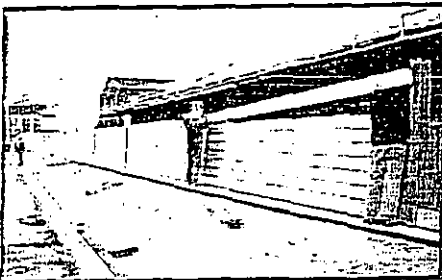
CONTACT US

## FEATURED IFCW™ PROJECTS FROM AROUND THE UNITED STATES



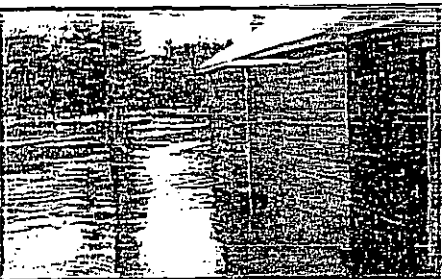
Easy Grand Forks, MN

Flood Control America is now in its third phase of this flood control project, which is a U.S. Army Corps of Engineers-sponsored project. The first phase of this project was recognized by U.S. Department of Commerce Economic Development Administration (EDA) as one of its five major "success stories" in the 20th century. View Details



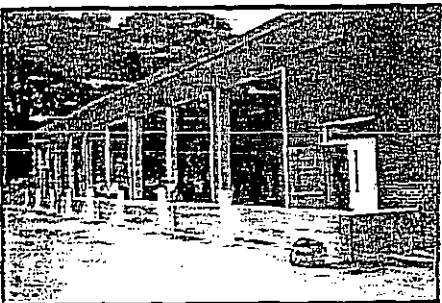
Louisville, KY

The IFCW™ was an ideal solution for the city of Louisville when they began revitalizing their historic downtown and riverfront including plans for their newly refurbished stadium. The stadium is one of the economic anchors of the area and had to be protected from flooding. With the IFCW™ the restoration has shown an influx of visitors spending entertainment dollars enjoying baseball, history and the beautiful redeveloped Louisville riverfront. View Details



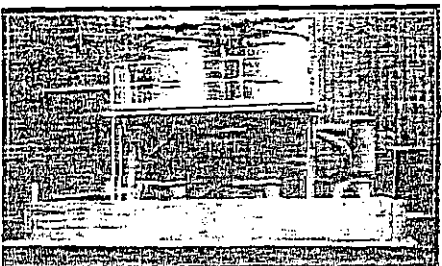
Fargo, ND

This Lutheran School invested in the IFCW™ following the devastating flooding of the Red River in 1997. The river flooded again in Spring 2000 and in Spring 2001 and the IFCW™ performed splendidly. At the time of the flood, 5 team members erected the IFCW™ in approximately 1-25 hours. View Details



Danvers, MA

The Invisible Flood Control Wall™ is frequently used to floodproof municipal buildings such as this town garage in Central Massachusetts. The IFCW™ makes it easy to protect the valuable assets inside the garage while not blocking the door when there is no flooding. View Details

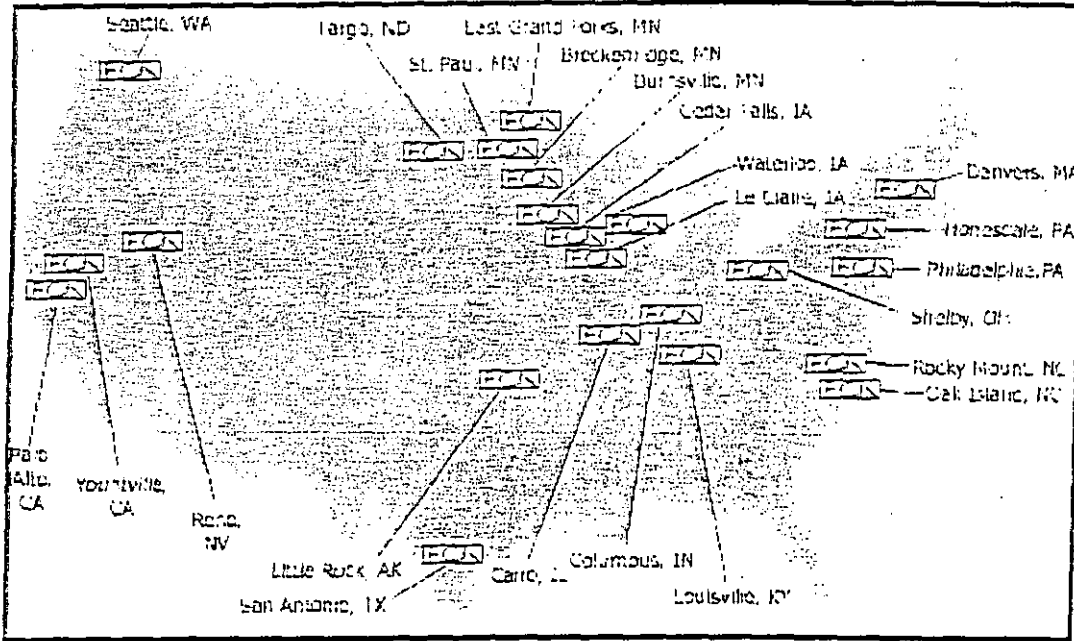


Philly, PA

The IFCW™ creates a dry, protected space, isolated from water. Philly, PA View Details

60C

000678



6D

000679



FLOOD CONTROL AMERICA

[ABOUT THE FCA](#) | [VIDEOS](#) | [INSTALLATION MAP](#) | [FAQ](#) | [ABOUT FCA](#) | [PRESS](#) | [MULTIMEDIA](#)

## FREQUENTLY ASKED QUESTIONS

### How long does the initial construction of the IFCW™ take?

As with any construction project, the amount of time it takes to construct the wall depends on the size and complexity of the project. However, construction time could be as short as three months, including design time.

### How much time and effort does it take to erect the IFCW™?

The IFCW™ is easily erected in a relatively short amount of time. Man hours can be calculated by multiplying the height times the width and dividing by 100.

For example, a 30-foot wide by 10-foot high wall would take 3 hours to erect. With two men (the recommended amount), this wall would be up in 1.5 hours.

However, it should be noted that this would bring the wall to its 100-year floodplain height, which very well may be unnecessary. Quite probably, these same men would only be erecting the wall to half its potential height or less, requiring only 45 minutes or less to erect.

On smaller, more difficult sites, unit production may be slower. In such cases, erection time may be calculated by multiplying the height times the width and dividing by 100.

(9 minutes my project)

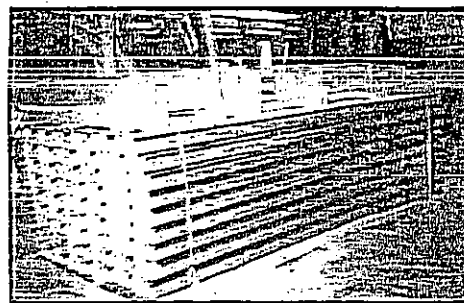
### How long are the IFCW™ planks?

The lightweight aluminum planks which comprise the IFCW™ are available in any length, however 20-feet is the recommended length.

### How much storage room does the IFCW™ require when it is not in use?

Since the IFCW™ is stored with its aluminum planks stacked neatly on top of each other, with the piling supports stacked on top of them, the required storage space is minimal.

The planks in the photo are 10-feet long, and make up a wall that is 30-feet wide and 4-feet high. Obviously, the storage room required, 5' x 5' x 10', for this wall is negligible.



### How much of the IFCW™ is left on site when the planks are in storage?

The only component of the IFCW™ that remains when the wall is stored is the concrete foundation, leaving the protected site completely unharmed when water levels are normal.

### How long does the IFCW™ last?

The main parts of the IFCW™, its aluminum planks and steel piling supports, are virtually infinite, easily meeting 50 to 100-year design criteria. Additionally, gaskets are replaceable if they are damaged during use.

### Does the IFCW™ really require as little maintenance as more traditional flood protection such as earth levees and concrete walls?

Absolutely. The truth is, earth levees are constantly in danger from burrowing rodents and tunneling snakes, as well as considerable erosion during flood times, both of which require vigilant observation and upkeep. Similarly, concrete walls are vulnerable to the destructive forces of freeze and thaw, scaling, and the extensive and ongoing damage of vandalism and graffiti.

Since the IFCW™ remains stored securely away from water when not in use, it is subject to none of the dangers that affect traditional flood control systems.

### Is the IFCW™ really as reliable as traditional flood control systems?

Yes. The IFCW™ was built by the U.S. Army Corps of Engineers and is designed to meet the same standards as traditional flood control systems. It is a proven, reliable, and cost-effective flood protection system.

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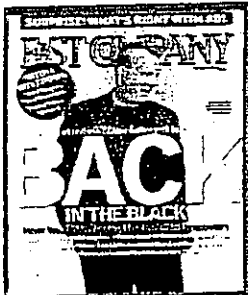
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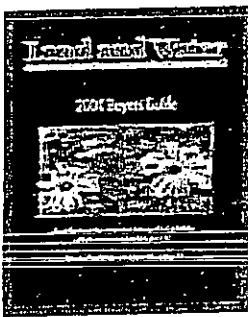
ABOUT THE IFCW PRODUCTS INSTALLATION MAP FAQ ABOUT FCA PRESS MULTIMEDIA

## ARTICLES ABOUT THE IFCW



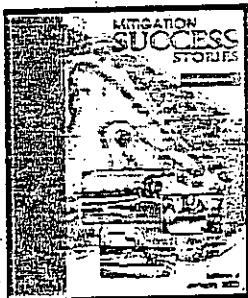
Grand Forks and East Grand Forks: After the Flood (literally), by Linda Tischler from East Company magazine

Looking for other solutions, he turned to a Massachusetts-based company, Flood Control America LLC, which licensed a product called an Invisible Flood Control Wall. It had been developed in Cologne, Germany to protect the area around the city's famous cathedral from periodic flooding by the Rhine. Essentially a post-and-plank structure, the wall can be assembled to keep out floodwaters, then deconstructed and put back in the shed when the waters recede. Read On.



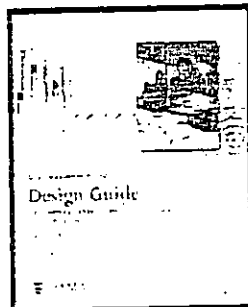
'Invisible' wall protects Red River Valley, by George Fiviklund and Jennifer Reader from Land and Water magazine

In the case of the IFCW™ installation at East Grand Forks, intermediate and vertical piling supports bolt into anchor devices mounted deep in a concrete wall base. When needed, the 20-foot sealed (horizontally) and extruded aluminum planks stack between them. (Additional support for walls over 8-feet in height, are provided by pin-connected diagonal braces with a horizontal tension rod to transfer the load to post caps anchored.) Read On.



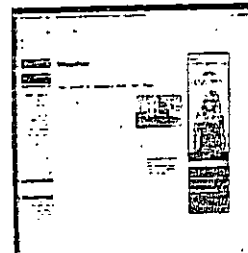
Mitigation Success Stories (from the Association of State Floodplain Managers) in PDF format

The IFCW is a removable wall that is erected only during the threat of a flood. Patented twenty-foot sealed, interlocking hollow aluminum planks stack on top of a sill plate integrally constructed on a permanent concrete foundation. Post- and pin-mounted diagonal braces provide additional support. A working crew of 2 people can install 1200 covers feet in 2 hours. Read On. (pgs. 43, 44, 57)



Design Guide for Improving Flood Safety in Sanctuaries, Floods, and High Winds

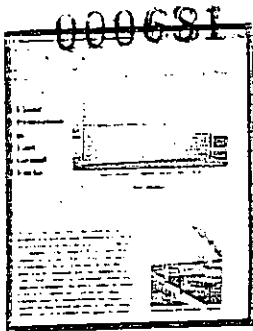
Modified woodwall. This category of flood protection measures includes fully engineered flood protection structures that have permanent features (foundation and vertical supports) and features that require human intervention to minimize when a flood is predicted. Additional components called slanks or stop-slabs. Read On. (pgs. 6, 69)



The group of recovery from 1997 (from the USA Today and the AP)

While it's another a couple of miles, and much further out over the river. Then in at the edge of East Grand Forks, near the town, which boasts a Target's sporting-goods store that draws its shoppers from across the region. After some time to be a bit, decorative, at least and the flood. The area is the face of the river, and the flood protection. An 18,000-sq-ft floodwall, with high temporary walls of 10 ft. At all, the floodwall is the floodwall.

6F



# Flood Protection in East Grand Forks on Main Drives

The city of East Grand Forks built a new dike and floodwall to protect the rebuilt downtown area. The two blocks closest to the river will be protected by the first U.S. installation of the "Invisible Flood Control Wall". The "Invisible Flood Control Wall" is erected only when a flood threatens. The rest of the time, the area will be visible from the downtown area. The "Invisible Flood Control Wall" is erected on a permanent concrete base. When a flood threatens, the vertical columns are inserted in holes in the concrete base, and the interlocking horizontal planks are stacked between the columns. Flood Control America, LLC

HOME | INSTALLATION MAP | FAQ | SITE MAP | TESTIMONIALS | AWARDS | ARTICLES | VIDEO | PROJECTS | POWERPOINTS | CONTACT US

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000682



## TESTIMONIALS

"It worked like a charm." - Mark Britner, City Engineer, Fargo, North Dakota

"The IFCW served us quite well. We are happy about the system." - Lynn Britz, Senior Engineer, Fargo, North Dakota

"The United States must start utilizing European-type flood control systems to protect communities and lower FEMA emergency flood costs." - President George W. Bush, discussing the budgetary process on April 24, 2001

"We had to be able to see the river and protect ourselves from it and keep our history the way it should be. The Invisible Flood Control Wall was the solution. We would have a 12-foot wall there right now if it weren't for the IFCW. Many people comment on how attractive the approach to the riverfront is. They don't feel like they're driving into a flood control project." - Gary Sanders, City Engineer, East Grand Forks, Minnesota

"Sandbagging is labor-intensive. Then when the emergency passes, nobody is left to dispose of the sandbags. With the IFCW panels, you only put up what you need. They're light, so you only need a few people. We're really happy with it. We could maintain the view of the river that way." - Ron Arends, City Engineer, Cedar Falls, Iowa

"You see the good, solid investment in permanent dikes and the invisible wall that protects East Grand Forks' new downtown. You are all very well prepared. That wall is outstanding. More of that had to be done in the state." - Former Governor Jesse Ventura, Minnesota, after viewing the IFCW in East Grand Forks

"It's not just a big cement wall when you're coming into town. The wall has a nice design, and is relatively simple to put up." - Mayor Cliff Barth, Breckenridge, Minnesota

"The river can be harmful one season of the year, but the rest of the year it should be enjoyed. We decided to embrace the river by facing the downtown district towards it, since people like to look at things of beauty. That's where the invisible wall came in." - Mayor Lynn Staudt, East Grand Forks, Minnesota

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GH

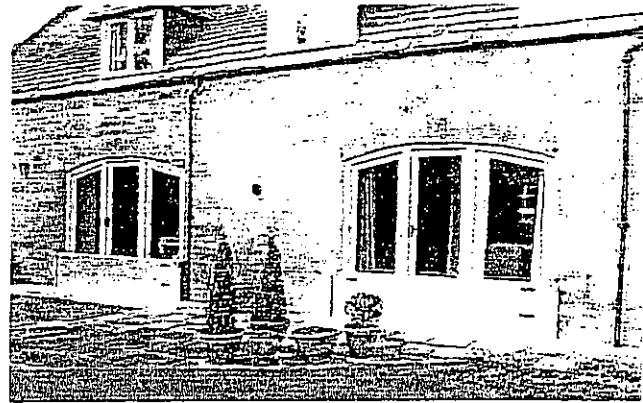
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## Slot-In Flood Barriers

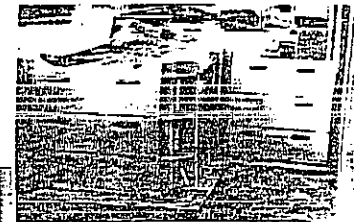
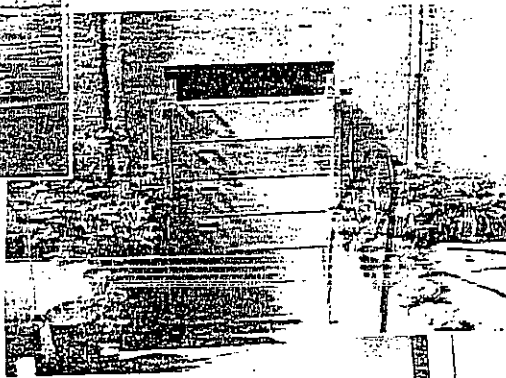
Modular design, interlocking components and custom manufacturing, combine to make this system the most versatile and advanced slot-in flood-board system currently available.



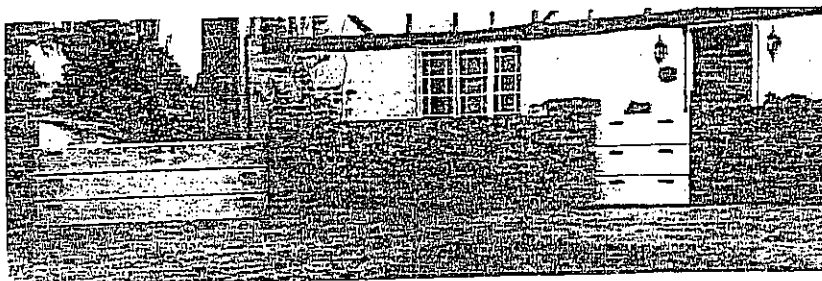
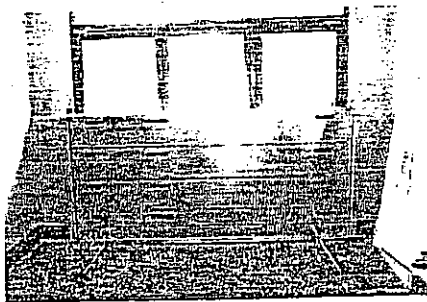
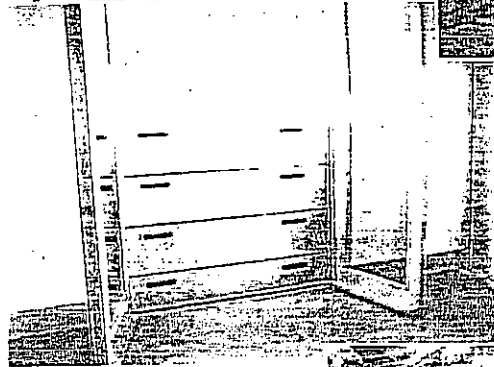
*Versatile Flood Protection  
....robust and unobtrusive*



With a host of design features (see facing page) and the ability to protect openings of up to 6 metres wide against flood depths of up to 2.4 metres, this system is ideal for protecting doorways, loading bays, pedestrian walkways, shop fronts, in fact, virtually any opening that requires dependable defence against flooding.



The modular components, simplicity of design & aluminium beams with ergonomically positioned carrying handles, enable the system to be easily and quickly erected by one person - without the need for special skills or training.



Flood Control reserves the right to change product specifications and availability without notice.

CAN BE USED ACROSS DRIVEWAYS  
PHOTO AVAILABLE

FLOOD

CONTROL



## Slot-In Flood Barriers

000684

Introduced in 1994, thousands of slot-in barriers are currently installed in the UK and throughout Europe, and with a policy of continuous development and improvement the systems remain at the forefront of flood defence design.....

### Designed for APPLICATION

- Can be installed on any flat watertight surface
- Heights 300mm to 2400mm (in 300mm increments)
- Opening width any size up to 6500mm in a single span
- Can be extended using removable intermediate supports
- Reveal, Face or Corner mounted support channels
- Custom stand-offs (up to 350mm) to clear weatherboards etc.
- Can also be installed behind doors (e.g. for Emergency Exits)
- Vandal resistant covers & security clamps to lock systems
- Can be finished in RAL colour to match décor
- Fully removable options for listed buildings
- Stainless steel options for salt water environments
- Can be left semi-permanently installed

### Designed for CONVENIENCE

- Can be installed by any competent builder or DIYer
- Aluminium beams weigh less than 8kg per linear metre
- Ergonomically positioned carrying handles
- Quickly and easily erected by one person
- Modular design requires no specific skills or training to erect
- Storage brackets available for beams & components

### Designed for DURABILITY

- Construction grade steel & aluminium components
- Steel fabrications hot-dip galvanised
- Patented seal design stops silt clogging
- All seals made with EPDM for weather and UV resistance
- Seals fixed in preformed channels and easily replaceable
- Twinned seals for extreme flood/impact conditions
- Suitable for constant daily use

### Designed to STANDARDS

- Manufactured & tested to exceed DIN19569-4
- Steel sections manufactured to EN10027
- Fabrications hot-dip galvanised to ISO 1461:1999
- Heat treated aluminium extrusions to BS1474
- Stainless steel sections manufactured to EN10088
- Seals all Ethylene Propylene Diene Monomer (EPDM)
- All fixings Load Rated Hilti™ or Fischer™

000635

LOCAL BUILDERS OF  
UNDERGROUND PARKING

000686

david

LOCAL UNDERGROUND

From: "davidstebbins" <davidstebbins@cox.net>  
To: "david stebbins" <redavidstebbins@cox.net>  
Sent: Saturday, February 10, 2007 9:07 PM  
Subject: Emailing: Phoenix couple carves out their niche in Coronado - Clients build 8, 500-square-foot house, with more than half of it underground

**SFGate.com**

## **Phoenix couple carves out their niche in Coronado** **Clients build 8, 500-square-foot house, with more than half of it underground**

Hilary E. MacGregor, Los Angeles Times  
Saturday, November 9, 2002

The clients, from Phoenix, had dreamed of a house on the water in Coronado, the "island" that lies across a graceful arc of bridge spanning San Diego Bay.

Surrounded on three sides by glimmering blue bays and the Pacific Ocean, the seductive 13.5-square-mile city of Coronado is connected to the mainland by only a narrow, silvery spit of sand.

Real estate in this exclusive enclave sells for more per square foot than almost anywhere else in California, and rarely comes onto the market. Newcomers hoping to get a foothold here must spend astronomical sums to buy any odd piece of property they can.

So when the clients got a chance at a piece of land with a to-die-for view of downtown San Diego, they snapped it up — for around \$2 million.

It had some drawbacks. It was small — about 7,500 square feet. The previous owner had sold viewing rights to the two-story house behind, so they couldn't build higher than 11 feet. At high tide the water on the bay lapped to within 65 feet of where they wanted to begin construction.

"When they first got it, I looked at it and thought, 'What are you going to do, have galoshes in the front room?'" said Harry Jackman of the Coronado-based Jackman Group, a planning, design and construction company.

Architect Tom Vaughn had a better idea: Build down. "Basically, it's free space," Vaughn said. "You can have all the bulk and height you need."

Two and a half years and 1,100 square yards of concrete later, the clients from Phoenix have an 8,500-square-foot house, with more than half of it underground, including a 2,500-square-foot garage and 2,500 square feet of living space, with elevator, sauna and media room.

**Initial doubts**

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"At the time, I was wondering if this was all even possible," said the lady of the house, who declined to give her name. "That was before I became a believer."

The concept of living underground in sunny Southern California might sound like bad science fiction or a throwback to the era of the bomb shelter, but it turns out to be an imaginative -- if expensive -- way to get around strict zoning ordinances and squeeze really big houses onto really small lots.

In Coronado, where the floor-area ratio above ground is controlled tightly and houses can be no more than two stories above grade, contractors can build out to the property line below ground.

### Plenty of room below

"You can go 40 stories below grade!" Vaughn said, as if he's waiting for a client to ask him to.

The Phoenix couple's house was not the first on Coronado to be built down. In the past 15 years, Ralph Brienza and his son David, owners of Coronado Construction Management Inc., have built about 12 underground structures -- mostly garages and storage spaces.

The Jackman Group has built a total of seven houses underground in the past decade, and two more are in the works. And recently, Santee-based Fred C. Perry Construction undertook its first underground structure -- a \$12-million, 8,400-square-foot home on the bay. Perry, too, said he has plans for several more.

The underground phenomenon isn't new -- homes burrowed into hillside berms were popular in the energy-conscious 1970s, and commercial buildings have long been built down, to accommodate parking, utilities and even shopping malls.

But building basements below the water level does seem to be unique to Coronado. Representatives from the research arm of the National Association of Home Builders and the Building and Industry Councils of Los Angeles and San Diego counties said they could not recall such underground living spaces being built anywhere else.

Donna Morafcik, communications director for the Building and Industry Association of San Diego, said nearby La Jolla is comparable to Coronado in both income level and scarcity of land. "On a wide-scale basis, though, I haven't seen the whole underground thing come into play regionally," she said.

Building down solves some problems peculiar to Coronado but has peculiarities of its own. Jackman and Vaughn have hit the water table in five of the seven houses they've built so far. Brienza has hit water with all of the houses he's built there.

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Brienza said he built 500 houses in Denver that had to deal with artesian wells and spring water flooding into the foundations. He claims to have brought the concept of building underground to the Coronado Cays, where he began to build houses with basements within 15 feet of the sea wall. He said he has had no problems so far.

Perry confessed he "lost a few nights' sleep" on his first venture underground. "We had 14 pumps going during construction. And then you have to make sure that you're not sucking moisture away from other houses and causing a sinkhole," he said.

Perry said they were pumping 565,000 gallons of water a minute during construction. Builders then had to get a permit to dump the water back into San Diego Bay, requiring tests with fish and a sea urchin.

But it turned out that fresh water was flowing in as well, so they failed the test three times. "We had to hire a marine biologist," he said. "Every week they had to come and sample the water. That alone cost over \$100,000."

#### They're expensive

Building down probably will remain an option available only to the very rich of Coronado. While Brienza said he can build underground for as little as ~~\$50,000~~, Vaughn said his underground structures have ranged from \$250,000 to \$1 million, depending on size and whether the builders hit water.

Perry, whose first underground structure cost his clients \$500,000, said money is no object for most of the people he works with. And he predicts the trend will continue.

"There is no land there," he said of Coronado. "You have to literally wait for someone to die or sell their house. People pay \$2.4 million for a (waterfront) lot that is 108 by 90 feet. It's a lot of money for a little dirt.

You have to utilize every square inch to justify paying that kind of money."

The Phoenix couple's house is a low-lying, pale cream collage of stucco, shingle and Texas shell stone, surrounded by concrete walls topped with laminated glass to take in the view of the bay and the dramatic downtown San Diego skyline. The walls also serve as a sea wall (even the gate has a watertight seal), built to keep out rising water. Cement sofas and chairs topped with blue-and-white striped cushions are built into the patio.

The upper floor is spacious and airy and gives no hint of what lies beneath.

The beachfront expanse is almost all windows, and massive skylights let the sunshine in. But

my project 75-100K including flood gate

000689

because the grade for the house was below the mean high tide line, the project turned out to be one of the most challenging the Jackman Group has faced.

The builders hit the water table 5 feet below where the first floor was supposed to be. It took 15 dewatering wells to lower the water level so they could work. They pumped out 415,000 gallons a month for the first four months.

The first concrete pour took 42 trucks, Jackman said. The floors underground are 18 inches thick and the walls a foot, as impenetrable as a medieval fortress.

The sand of the site, layered with plastic and a few concrete slabs, was waterproofed before the concrete pour with Paraseal, a mixture of plastic and bentonite clay. Vaughn describes Paraseal as "self-healing," meaning that the material expands when water hits it and fills the tear.

"If the wall springs a leak, you just inject the wall with this huge syringe," explained Sheryll Jackman, a real estate agent and designer for Jackman Group. Her husband, Harry, said a few houses have experienced very minor leaks.

On the street side, a curve of driveway disappears under the house and opens into a garage as big as a mini-mall parking lot. To counter the claustrophobic feeling of being underground, Vaughn tries to build his ceilings high and introduce a source of natural light.

In this house the ceilings are 8 1/2 feet -- slightly higher than in a typical house. (Some of his underground living spaces have ceilings as high as 10 feet.)

In the first of two bedrooms there is a window onto a tunnel to the sky, resembling the view from a rabbit warren. Equipped with a 15-foot ladder, the tunnel allows a wan shaft of natural light to enter the room, which instantly dispels the bomb-shelter feel of the space. There is also a bathroom, a sauna and a media room below ground, and an elevator.

<http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2002/11/09/HO172419.DTL>

This article appeared on page HO - 6 of the San Francisco Chronicle

000690

# WATERPROOF BASEMENT SYSTEMS

TRIPLE REMOVAL Sump pump  
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A wet basement is a common problem in all types of basements - from concrete to stone to block foundations - and we've fixed thousands of each type. Learn what causes your basement water problems and how they can be fixed, using state-of-the-art, patented, award winning methods.

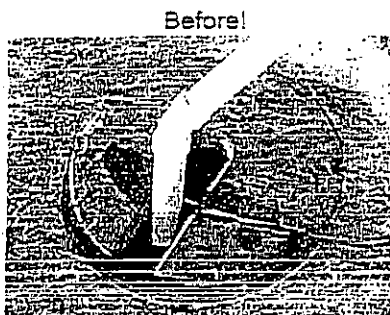
A dry basement protects the investment you made in your home and enables you to increase your living space or add additional storage space.

If you suffer from a wet, damp, or musty basement, or have mold and mildew in your home, we can assess your problem with a free, in home inspection, educate you to the causes, and design a permanent solution, customized just for your basement problem. Our specialists guide you through our interactive multimedia presentation, "Basement Vision", where you can actually see your basement transformed into bright, clean, comfortable, healthy and of course, dry usable space!

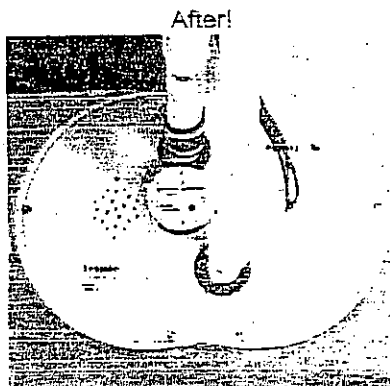
The heart of any basement-waterproofing project is the drainage system to remove the water below the floor. Basement Systems carries a complete line of patented basement waterproofing and basement environment products. To the right is the patented WaterGuard Basement Waterproofing System and the patented TripleSafe, the ultimate sump pump system offered exclusively by authorized Basement Systems dealers.

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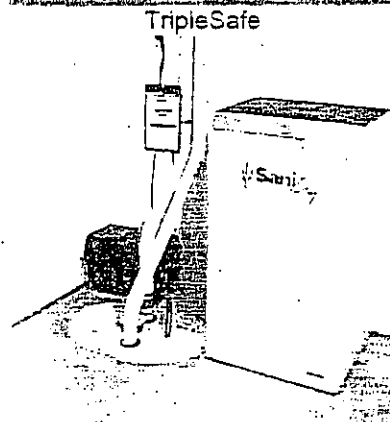
Call toll-free today to schedule your free estimate and receive your FREE copy of *Dry Basement Science!* (800) 281-3765 or Visit us online at [www.basementsystems.com](http://www.basementsystems.com)



Before!



After!



TripleSafe

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- Basement Waterproofing
- Getting Ready to Finish The Basement
- Basement Odors and Air Quality
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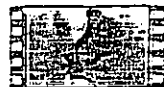
Basement Waterproofing



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## NASTY CRAWL SPACE?

Protect Your Home Permanently by Completely Isolating It from the Earth! [www.basementsystems.com](http://www.basementsystems.com)

Basement Systems®  
WaterGuard  
TripleSafe

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Basement Dry proofing

Your local Barrier Solutions Contractor.

## Membrane Properties

Type	Polymer-enhanced asphalt liquid-applied membrane	
Color	Black	
Solids	64% $\pm$ 3% (percent by weight)	
Density	8.2 $\pm$ 1 lbs/gal	
Application	Airless spray	
Application Temperature	Minimum 20°F	
Application Thickness	60 mils (wet)	
Cure Time	16 - 24 hrs	
Adhesion to Concrete	Results: Exceeds	Method: ASTM C-836
Elongation	Results: >2000%	Method: ASTM D-412
Water Vapor Permeance	Results: 0.08 perms for 40-mil dry coating (grains/sf/hr)	Method: ASTM E-96 Dry Method
Liquid Water Absorption	Results: 0.3% (wt)	Method: ASTM D-1228
Resistance to Degradation in Soil	Results: Good	Method: ASTM E-154
Mold Growth and Bacterial Attack	Results: No degradation	Method: ASTM D-3273, ASTM D-3274
Resistance to Hydrostatic Head (ft of water)	Results: Could not generate hydrostatic pressure	Method: See*

\*Measured in-place with an ASTM D-4814 notch film gauge. Membrane cures (dries) to 40 mils. 72-hour water soak 1' x 2' x 0.46" samples of waterproofing compound. When foundation board was applied to 1101-N-DRI, the water drained away at a faster rate than the surrounding soil percolated, eliminating any hydrostatic build-up.

## Board Properties

Type	Pink unfaced rigid fiber glass board		
Board Size	4' x 8'	4' x 4'	
Board Thickness	3/4"	1-3/16"	2-5/8"
Drainage Ability (hydraulic gradient of 1.0)			
Board Thickness	3/4"	1-3/16"	2-5/8"
Gallons/Hour/Lineal Foot	74	118	237
Thermal Resistance			
Board Thickness	3/4"	1-3/16"	2-5/8"
Resistance	R-3	R-5	R-10

At 65% compression, foundation board has the drainage capabilities of coarse sand.

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**DrainStar®**  
**Stripdrain**

# Specifications

BASEMENT Dry proofing

DrainStar stripdrain product (DrainStar) is a two-part geocomposite drain prefabricated with a rigid polymer core covered on all sides with a non-woven, needle-punched polypropylene filter fabric. The core features a series of engineered cones that collect and move water to designated drainage exits. The fabric allows water to flow into the drain core while restricting backfill soils and other particles which may create clogs.

## Typical Property

### Drain Properties

Compressive Strength, lbs/sq ft  
 Shear Strength, lbs/sq ft  
 Peel Strength, lbs/sq ft  
 Fungus Resistance (core)  
 In-Plane flow, gpm/ft width  
 Hydraulic gradient = 0.1, loading = 10 psi  
 Unobstructed inflow area  
 Primary side

## Test Method

6000-9000	ASTM D1621 (Mod.)
6000/9000	ASTM D1621 (Mod.)
38	ASTM D1876
No Growth	ASTM G21
21	ASTM D4716
85%	

### Fabric Properties

Material  
 Grab Tensile Strength, lbs  
 Puncture Strength, lbs  
 Trapezoidal Tear, lbs  
 Mullen Burst Strength, psi  
 Elongation, %  
 EOS (AOS)  
 Permeability, cm/sec  
 Flow Rate, g/min/sq ft  
 UV Resistance, (After 500 hours)  
 Fungus Resistance

Polypropylene	
110	ASTM D4632
65	ASTM D4833
50	ASTM D4533
215	ASTM D3786
60	ASTM D4632
100 sieve	ASTM D4751
0.30	ASTM D4491
150	ASTM D4491
70%	ASTM D4355
No Growth	

### Dimensional Data

Thickness  
 Standard Widths  
 Roll Weight

1 inch  
 min. 12 inches  
 min. 200 lbs

For more information on DrainStar, talk to your  
 Barrier Solutions Contractor or call Tremco Barrier Solutions.

800-DRY-BSMT

[www.guaranteeddrybasements.com](http://www.guaranteeddrybasements.com)

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000674  
Basement Dryproofing

MOISTURE OUT. CONFIDENCE IN.

### TUFF-N-DRI SYSTEM APPLICATION

TUFF-N-DRI® is North America's #1 brand of waterproofing for new basements. It protects against three main sources of moisture from basement walls - leaks, seepage and interior condensation.

Installed by select applicators. TUFF-N-DRI Basement Waterproofing System is installed only by Barrier Solutions Contractors. These contractors undergo training to ensure the highest quality application.

**Surface preparation.** The wall surface should be smooth and monolithic. Remove loose aggregate and sharp protrusions from the wall. Voids, spalled areas and exposed aggregate should be patched with a suitable mastic before spraying. TUFF-N-DRI membrane does not require any priming or special preparation.

**System application.** TUFF-N-DRI membrane is sprayed evenly over the entire foundation wall. WARM-N-DRI® Foundation Board is applied over the waterproofing membrane as it cures.

TUFF-N-DRI Basement Waterproofing System can be applied when ambient temperatures are as low as 20°F, allowing for fewer construction delays. TUFF-N-DRI membrane may be applied on poured concrete and block foundations. On poured concrete basements, TUFF-N-DRI can be applied as soon as the forms are removed, and on block basements, as soon as the mortar is dry.

**Foundation board performance.** WARM-N-DRI Foundation Board keeps foundation wall temperatures closer to the air temperature of the basement, which helps reduce interior condensation. Reduced condensation ensures less humid, more comfortable basement space. The placement of the foundation board on the wall's exterior also helps reduce the risk of damage due to freeze/thaw cycles, particularly if the foundation board is extended to the sill plate.

In addition, the foundation board protects TUFF-N-DRI membrane from damage during backfilling or damage from other construction trades. The compressibility of the foundation board will also absorb moderate soil expansion and help protect the basement wall.

To assist drainage, WARM-N-DRI Foundation Board should extend to the footing and connect to a functioning perimeter drainage system, such as DrainStar® Stripdrain. The foundation board is required for all warranted TUFF-N-DRI Basement Waterproofing System installations.

**Model Energy Code.** Computer analysis of home energy use indicates that a considerable portion of a typical home's energy loss comes from heated, uninsulated basements. By installing the foundation board to the sill plate, the entire basement wall is insulated, and energy efficiency is maximized. Many states have adopted the Model Energy Code. Because WARM-N-DRI Foundation Board provides insulating performance, it assists with compliance to this code.

**Environmentally responsible.** TUFF-N-DRI membrane uses a non-flammable, water-based carrier that meets VOC limits in all 50 U.S. states. It has been thoroughly tested by independent labs using Federal EPA standards for leaching. The results prove that no harmful leaching of the TUFF-N-DRI membrane occurs.

**Availability and cost.** TUFF-N-DRI Basement Waterproofing System is competitively priced and available through your local Barrier Solutions Contractor. For details, contact your local Barrier Solutions Contractor, call 800-DRY-BSMT or visit TUFF-N-DRI.com.

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ICC Evaluation Service, Inc.  
www.icc-es.org

Business/Regional Office ■ 5360 Workman Mill Road, Whittier, California 90601 ■ (562) 699-0543  
Regional Office ■ 900 Montclair Road, Suite A, Birmingham, Alabama 35213 ■ (205) 599-9800  
Regional Office ■ 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 ■ (708) 799-2305

DIVISION: 02—SITE CONSTRUCTION  
Section: 02620—Subdrainage

## REPORT HOLDER:

AMERICAN WICK DRAIN CORPORATION  
1209 AIRPORT ROAD  
MONROE, NORTH CAROLINA 28110  
(704) 238-9200

[www.americanwick.com](http://www.americanwick.com)  
[info@americanwick.com](mailto:info@americanwick.com)

## EVALUATION SUBJECT:

AKWADRAIN™ FOUNDATION STRIP DRAIN

## ADDITIONAL LISTEES:

DRY DOG BARRIERS, LLC  
POST OFFICE BOX 743  
MATTHEWS, NORTH CAROLINA 28106

EPRO SERVICES, INC.  
PO BOX 347  
DERBY, KANSAS 67037  
(316) 262-2513  
[eproserv@aol.com](mailto:eproserv@aol.com)

TREMCO BARRIER SOLUTIONS, INC.  
6402 EAST MAIN STREET  
REYNOLDSBURG, OHIO 43230  
(614) 322-4420  
[www.tremcoinc.com](http://www.tremcoinc.com)  
[wellsia@tremcoinc.com](mailto:wellsia@tremcoinc.com)

## 1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2003 International Building Code® (IBC)
- 2003 International Residential Code® (IRC)
- 1997 Uniform Building Code™ (UBC)
- BOCA® National Building Code/1999 (BNBC)
- 1999 Standard Building Code® (SBC)

Property evaluated:

Foundation drainage system

## 2.0 USES

AKWADRAIN™ Foundation Strip Drains are used as alternatives to conventional sand- or gravel-covered pipe drains installed around building foundations in accordance with the applicable code.

## 3.0 DESCRIPTION

### 3.1 General:

AKWADRAIN™ Foundation Strip Drain is a composite drainage system consisting of a three-dimensional drainage core and a nonwoven, needle-punched filter fabric and fittings. The filter fabric is wrapped around and bonded to the drainage core, preventing intrusion of backfill material and the filter fabric into the flow channels during backfilling. Soil particles are held back by the filter fabric, allowing water to pass through to the drainage core.

AKWADRAIN™ Foundation Strip Drain is 1 inch (25.4 mm) deep, and is available in standard nominal widths of 6, 12, 18, 24 and 36 inches (152, 305, 457, 610 and 914 mm, respectively) and roll lengths of 50 feet (152 m) to 500 feet (1524 m).

### 3.2 Components and Fittings:

**3.2.1 Rigid Core:** The Rigid Core component of the AKWADRAIN™ Foundation Strip Drain is thermoformed from a black extruded plastic to form an internal dimpled drainage core with a 1-inch (25.4 mm) depth.

**3.2.2 Filter Fabric:** The Filter Fabric component of the AKWADRAIN™ Foundation Strip Drain is a geotextile, made from polypropylene, that is black in color, nonwoven and needle-punched for water flow.

**3.2.3 Splice Fitting:** Splice fittings are used to connect rolls of AKWADRAIN™ together using a minimum 3-inch-wide (76 mm) polyethylene tape at each joint.

**3.2.4 Tee Fitting:** Tee fittings are used to join one run or branch of AKWADRAIN™ to another at a 90-degree angle. A minimum 3-inch-wide (76 mm) polyethylene tape is used to secure each joint.

**3.2.5 Outlet Fitting:** The Outlet Fitting is a black plastic fitting used to connect AKWADRAIN™ to the drainage piping, using a minimum 3-inch-wide (76 mm) polyethylene tape at the joint.

**3.2.6 Corner Fitting:** The Corner Fitting is a black plastic fitting used to connect AKWADRAIN™ sections around an inside or outside corner at a 90-degree angle. A minimum 3-inch-wide (76 mm) polyethylene tape is used to secure each joint.

**3.2.7 Corner Guard Fitting:** The Corner Guard is a black plastic fitting with polypropylene nonwoven geotextile bonded to plastic. The fitting is used as an alternative to the corner fitting to allow the bending of AKWADRAIN™ around an inside or outside corner at a 90-degree angle. A minimum 3-inch-wide (76 mm) polyethylene tape is used to secure each joint.

**3.2.8 Step Down Fitting:** The Step Down Fitting is a black plastic fitting used with AKWADRAIN™ to facilitate changing

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vertical height of the foundation. A minimum 3-inch-wide (76 mm) polyethylene tape is used to secure each joint.

**3.2.9 Universal Fitting:** The Universal Fitting is a black plastic fitting with polypropylene nonwoven geotextile bonded to the plastic, and is used to connect various widths of AKWADRAIN™ to the drainage piping. A minimum 3-inch-wide (76 mm) polyethylene tape is used to secure each joint.

#### 4.0 INSTALLATION

Prior to AKWADRAIN™ Foundation Strip installation, waterproofing or dampproofing shall be installed on the below-grade foundation or retaining wall in accordance with the applicable code. AKWADRAIN™ drainage material shall be unrolled along the footing at the base of the wall parallel to the length of the wall. The Filter Fabric adheres to the partially cured waterproofing or dampproofing. When AKWADRAIN™ is applied to cured waterproofing, dampproofing or concrete foundations, an adhesive compatible with the drainage material, or mechanical means (i.e., insulation anchors as specified by the waterproofing or dampproofing manufacturer), shall be used to hold the drain system in place. An outlet fitting shall be attached to the end of the AKWADRAIN™ Foundation Strip Drain, and a 4-inch-diameter (102 mm) plastic pipe complying with the applicable plumbing code is attached to the outlet fitting. The AKWADRAIN™ Foundation Strip Drain perimeter drain shall discharge by gravity or mechanical means into an approved drainage system that complies with the applicable plumbing code. The below-grade foundation or retaining wall shall then be backfilled and compacted to the density required by the applicable code.

The AKWADRAIN™ Foundation Strip Drain shall be installed in accordance with this report and the

manufacturer's published installation instructions. Where the manufacturer's published installation instructions and this report differ, this report shall govern.

#### 5.0 CONDITIONS OF USE

The AKWADRAIN™ Foundation Strip Drain as described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The manufacturer shall submit installation instructions for the AKWADRAIN™ Foundation Strip Drain at the time of permit application.
- 5.2 When adhesives are used to attach the AKWADRAIN™ Foundation Strip drainage system to foundation or retaining walls, American Wick Drain Corporation shall verify compatibility of the adhesives with the drainage system.

#### 6.0 EVIDENCE SUBMITTED

- 6.1 Installation instructions.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Composite Foundation Drainage Systems (AC243), dated February 2004.
- 6.3 A quality control manual.

#### 7.0 IDENTIFICATION

Each package of the AKWADRAIN™ Foundation Strip Drain shall be identified with the name and/or trademark and the address of American Wick Drain Corporation or one of the report listees, as indicated in Table 1 of this report; the product name; and the evaluation report number (ESR-1107).

TABLE 1—COMPANY NAME/PRODUCT NAME CROSS-REFERENCE

COMPANY NAME	PRODUCT TRADE NAME
American Wick Drain Corporation	AKWADRAIN™
Dry Dog Barriers, LLC	Drain Max™
Epro Services, Inc.	ECODRAIN-DS™
Tremco Barrier Solutions, Inc.	DrainStar®

Basement Dry proofing

## MEMBRANE PROPERTIES

Type	Elastomeric, emulsion based coating	
Color	Gray	
Application Temperature	32°F (0°C) to 100°F (38°C)	
Cure Time	24 Hours	
Film Thickness	40 mils dry @ 20ft <sup>2</sup> /gal.	
Elongation	150%	Method: ASTM D2370
Mandrel Bend	1/2" @ -15°F (26°C)	Method: ASTM C711
Shore "A" Hardness	70	Method: ASTM D2270
Water Vapor Permeance	5 perms	Method: ASTM E96
	Matte Finish	Coarse Finish
Solids	63 ± 2 (percent by weight)	72 ± 2 (percent by weight)
Density	11 lb/gal.	12.5 lb/gal.
Application	Airless Spray/ Brush	Air Atomized Texture Spray/Brush

## BOARD PROPERTIES

Type	Rigid fiberglass with integral glass surfacing mesh	
Board Thickness	1- 3/16"	2-3/8"
Thermal Resistance		
Resistance	R5	R10
Foundation Board Compression Properties		
Compression Pressure lbs./sf. (10% compression)	800	800
Drainage (Gallons/hour/lineal foot)	> 90	> 180

For more information, contact  
Tremco Barrier Solutions at 800-876-5624.

\* See actual warranty for complete details.

14F

# Horizon

## Foundation Finishing Systems

The Horizon Insulated System works with the TUFF-N-DRI® Basement Waterproofing System, extending foundation waterproofing and insulation protection from footing to sill plate.

**EXCLUSIVE**  
**30-YEAR**  
**Warranty**  
 for full-wall systems with  
**TUFF-N-DRI**

*Basement Dry Draft*

## Horizon Insulated System

### THREE-PART BARRIER SYSTEM

The Horizon Insulated System provides three levels of protection:

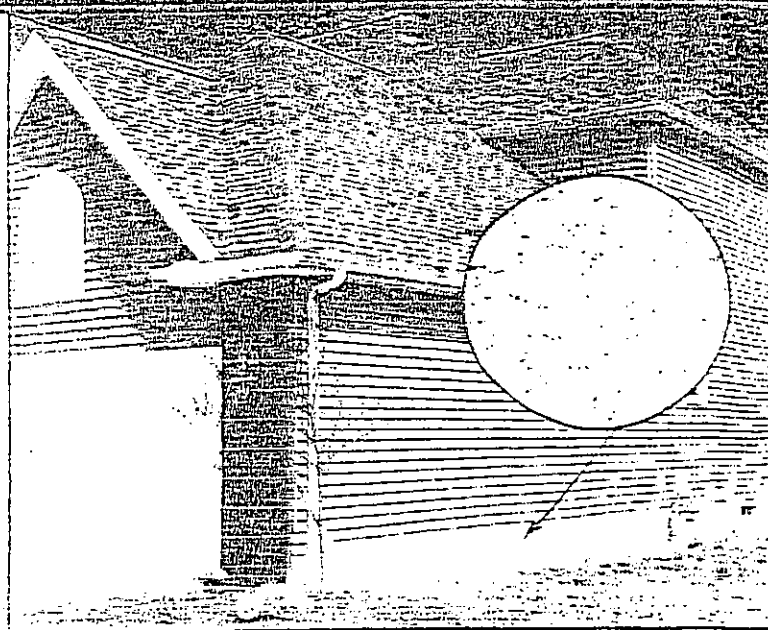
- ☐ Waterproofing membrane creates a seamless barrier to moisture from footing to sill plate.
- ☐ Rigid fiberglass insulation board boosts the home's energy efficiency and reduces interior foundation wall condensation.
- ☐ Durable, textured topcoat repels moisture and gives exposed foundation an attractive, finished look.

### WARRANTED PROTECTION FROM FOOTING TO SILL

☐ The Horizon Insulated System starts with North America's #1 foundation waterproofing brand, TUFF-N-DRI® membrane, on the exposed foundation wall, providing an uninterrupted moisture barrier that protects from the footing to the sill plate. This full-wall waterproofing membrane will reduce the number of leak call-backs, as a majority of foundation wall leaks on waterproofed walls occur at the grade line where below-grade waterproofing usually stops.

☐ Horizon ThermoPanel™ is a sturdy, design-engineered insulation panel that is placed on top of the waterproofing membrane and mechanically fastened to the exposed wall. This mesh-reinforced fiberglass panel delivers stability, rigidity and superb detailing performance. The Horizon ThermoPanel is available in either an R5 or an R10 insulation value, and helps prevent condensation on the interior above-grade foundation wall. Since it insulates the wall from the OUTSIDE, the need for interior foundation insulation is eliminated.

☐ The system is completed with Horizon Coat, a tough, spray-applied exterior finish. Horizon Coat not only adds an attractive, durable, UV-resistant finish to the exposed foundation wall, but also provides an extra layer of waterproofing protection to the home. Horizon Coat comes in a neutral gray color, and is available in either a matte or a coarse finish.



Horizon Coarse Coat (shown in photo above) provides a durable, textured topcoat that repels moisture and gives exposed foundation an attractive, finished look.

### FROM TREMCO BARRIER SOLUTIONS

Horizon Foundation Finishing Systems come from Tremco Barrier Solutions, with a heritage in spray-applied barrier technology stretching back more than 20 years. Since 1983, our team has sparked innovations in fluid membrane formulations and performance. And we offer more than two decades of experience installing spray-applied barriers - including TUFF-N-DRI Basement Waterproofing System, the #1 brand of new basement waterproofing in North America.

### INSTALLED BY TRAINED PROFESSIONALS

Horizon Foundation Finishing Systems are reliably installed by Select Barrier Solutions Contractors. Count on our quality-trained contractors to professionally and promptly install Horizon Foundation Finishing Systems on the homes you build.

For more details about the Horizon Foundation Finishing Systems call your local Select Barrier Solutions Contractor:

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**TREMCO**  
 /Barrier Solutions.

**PROTECTING HOMES**  
 WITH  
**BARRIER SCIENCE**

February 19, 2007

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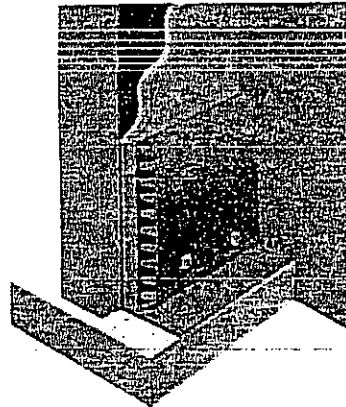
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## DrainStar® Stripdrain

THE GRAVEL-LESS DRAIN SYSTEM

- DrainStar® Stripdrain product (DrainStar) is designed to be used in combination with TUFF-N-DRI® and WATCHDOG WATERPROOFING® products.
- With DrainStar, your Select Barrier Solutions Contractor can install an effective foundation drainage system at the same time as your basement waterproofing system. You'll save scheduling time and hassles with just one contractor contact.
- DrainStar features two hard-working components: 1) A rigid polymer core of engineered cones that collect and move water to designated drainage exits. 2) A non-woven, needle-punched geotextile filter fabric to strain out backfill soils and other particles.
- DrainStar can replace traditional drain tile and gravel systems, bringing you a variety of attractive advantages.
- No scheduling of gravel deliveries.
- No carrying gravel in buckets or wheelbarrows.
- No damage caused by dumping of stones.
- No leftover gravel and drain tile scattered around the job site.
- Lower total installed cost than gravel and drain tile.

DrainStar® Specifications  
DrainStar® Sell Brochure  
DrainStar® Installation Guide  
DrainStar® Installation Video  
(160x120)  
DrainStar® Installation Video  
(640x480)  
DrainStar® ICC Report  
DrainStar® MSDS

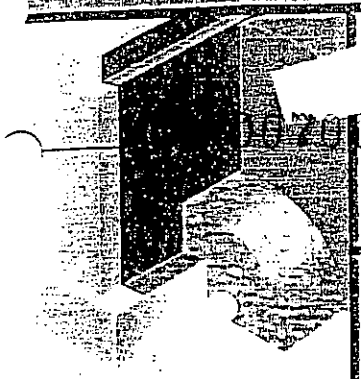


ARPM COMPANY

Basement Dry proofing

144





## WATCHDOG WATERPROOFING



WATCHDOG WATERPROOFING features a flexible, polymer-enhanced waterproofing membrane (A) that provides reliable, leak-free protection. WATCHDOG WATERPROOFING is designed for spray application on poured concrete or parged block walls.

### Installed by experts

WATCHDOG WATERPROOFING® is installed by Barrier Solutions Contractors – professionals skilled in the details of successful basement waterproofing. These contractors undergo extensive training and are monitored for quality performance to ensure the highest quality application.

### Surface preparation

The wall surface should be smooth, monolithic and clean. Remove loose aggregate, dust, mud or sharp protrusions from the wall. On poured concrete walls, remove all wall ties – both inside and out. Repair all substantial voids – including large tie holes, cracks and honeycombs larger than your fist – with an asphalt-based mastic or non-shrinking grout.



The WATCHDOG WATERPROOFING membrane is spray-applied to seamlessly bridge foundation settling cracks and seal out water penetration. Its material was specifically designed for spray application on below-grade exterior foundation walls. The membrane remains elastic at low temperatures for dependable year-round protection.

### System application

WATCHDOG WATERPROOFING membrane is sprayed evenly over the entire foundation wall. The membrane can be applied when ambient temperatures are as low as 20°F, and on damp or green concrete. However, the membrane must not be applied over standing water, a water film, ice or snow. On poured concrete basements, WATCHDOG WATERPROOFING can be applied as soon as the forms are removed, and on parged block basements, as soon as the mortar is dry.

### Curing and backfilling

Foundations coated with WATCHDOG WATERPROOFING should be allowed to cure at least 16 to 24 hours, or longer if ambient temperatures are below 45°F and/or if humidity is 80% RH or above. Make sure the membrane is cured before installing drain tile and gravel (unless the membrane is protected by foundation board at least 24 inches up from the footer) and backfilling. Use clean fill materials for backfilling. Avoid backfilling with sharp, angular rocks, any rocks bigger than a softball, and any materials that may puncture the waterproofing membrane.

### Drainage requirements

WATCHDOG WATERPROOFING is designed for use with a foundation drainage system consistent with local codes and good construction practices. A typical exterior drainage system consists of 3-inch minimum perforated drainage pipe – with gravel over the pipe, on the footer and at least 10 inches up the face of the vertical wall. The drain tile should channel water to either an operating sump pump or to daylight. The grade should always slope away from the foundation.

### Environmentally responsible

WATCHDOG WATERPROOFING membrane uses a non-flammable, water-based carrier that meets VOC limits in all 50 U.S. states. It has been thoroughly tested by independent labs using Federal EPA standards for leaching. The results prove that no harmful leaching of the membrane occurs.

### Availability and cost

WATCHDOG WATERPROOFING is competitively priced and available through your Barrier Solutions Contractor. For more information about WATCHDOG WATERPROOFING, contact your local Barrier Solutions Contractor, call Tremco Barrier Solutions at 800-DRY-BSMT or visit [WATCHDOGWATERPROOFING.com](http://WATCHDOGWATERPROOFING.com).

Your local Barrier Solutions Contractor is:

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WATCHDOG  
WATERPROOFING

WATCHDOG  
WATERPROOFING

000701

# SPECIFICATIONS

Basement  
Dry proofing

## MEMBRANE PROPERTIES

**Type** Polymer-enhanced asphalt liquid-applied membrane

**Color** Black

**Solids** 62 (percent by weight)

**Density** 8.1 lbs/gal

**Application** Airless spray

**Application Temperature** Minimum 20°F

**Cure Time** 16-24 hrs

**Thickness** 60 mils (wet)<sup>1</sup>

**Adhesion to Concrete** (Peel, N/m)

Results Exceeds

Method ASTM C-836

**Elongation**

Results 1800%

Method ASTM D-412

**Low Temperature Flexibility**

Results Flexible to 0°F

Method See<sup>2</sup>

**Crack Bridging Ability**

Results Exceed 10 Cycles to 1/8" at 0°F

Method ASTM-E836

**Water Vapor Permeance**

Results 0.44 perms for 60-mil wet coating (grains/sf/hr)

Method ASTM E-96 Wet Method

**Resistance to Degradation in Soil**

Results Good

Method ASTM E-154

**Mold Growth and Bacterial Attack**

Results No Degradation

Methods ASTM D-3273, ASTM D-3274

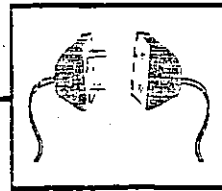
1. Membrane cures (dries) to 40 mils.
2. Bend waterproofing compound around 1" mandrel.

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000702

WATERPROOFING UTILITIES PER  
FEMA INSTRUCTIONS

000703



expensive to replace. In addition, these components typically provide the link between the electric service provider and the building. Therefore, the protection of these components is particularly important. Power handling equipment in commercial applications typically consists of the same components that are used in residential applications, but additional switches, distribution panels, and even transformers may be added to regulate the larger demand.

### Elevation

The most effective flood-resistant design of electrical systems in new and substantially improved buildings in flood-prone areas is elevation of all electrical components to levels at or above the DFE. Elevation gives the most assurance possible that, during a flood, the electrical system components would not be inundated by floodwaters. *Figure 3.3.3* shows a residential structure with electrical components located above the DFE.

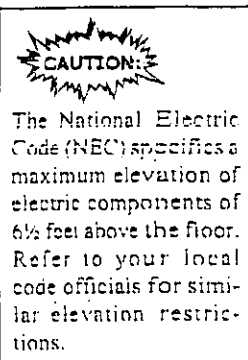
In some situations, the maximum elevation of a component, relative to the floor, is specified. If a component cannot be located above the DFE without exceeding the maximum elevation stipulated by code, it must be relocated to a higher floor within the structure. Or, as an alternative, installation of a platform with stairs to provide access to the elevated electrical components may also meet local code requirements.

### Relocation

If raising the equipment above the DFE is not practical, the power handling equipment can be moved to a utility shed that is above the DFE. Relocation of the equipment is an expensive option, but it can be effective in providing elevation of all the equipment. It is used in substantially damaged/improved structures where there is no room to relocate all the electrical equipment and appliances into the main structure above the DFE. In order to elevate the equipment above the DFE a separate structure is built just for housing the electrical equipment. From the separate structure a line is run into a breaker box located in the main structure. The connecting cable between the sub-structure and the main structure must be above the DFE.

### Component Protection

If it is not possible or practical to raise power-handling equipment above the DFE, measures can be taken to protect the equipment at elevations below



FR: FEMA

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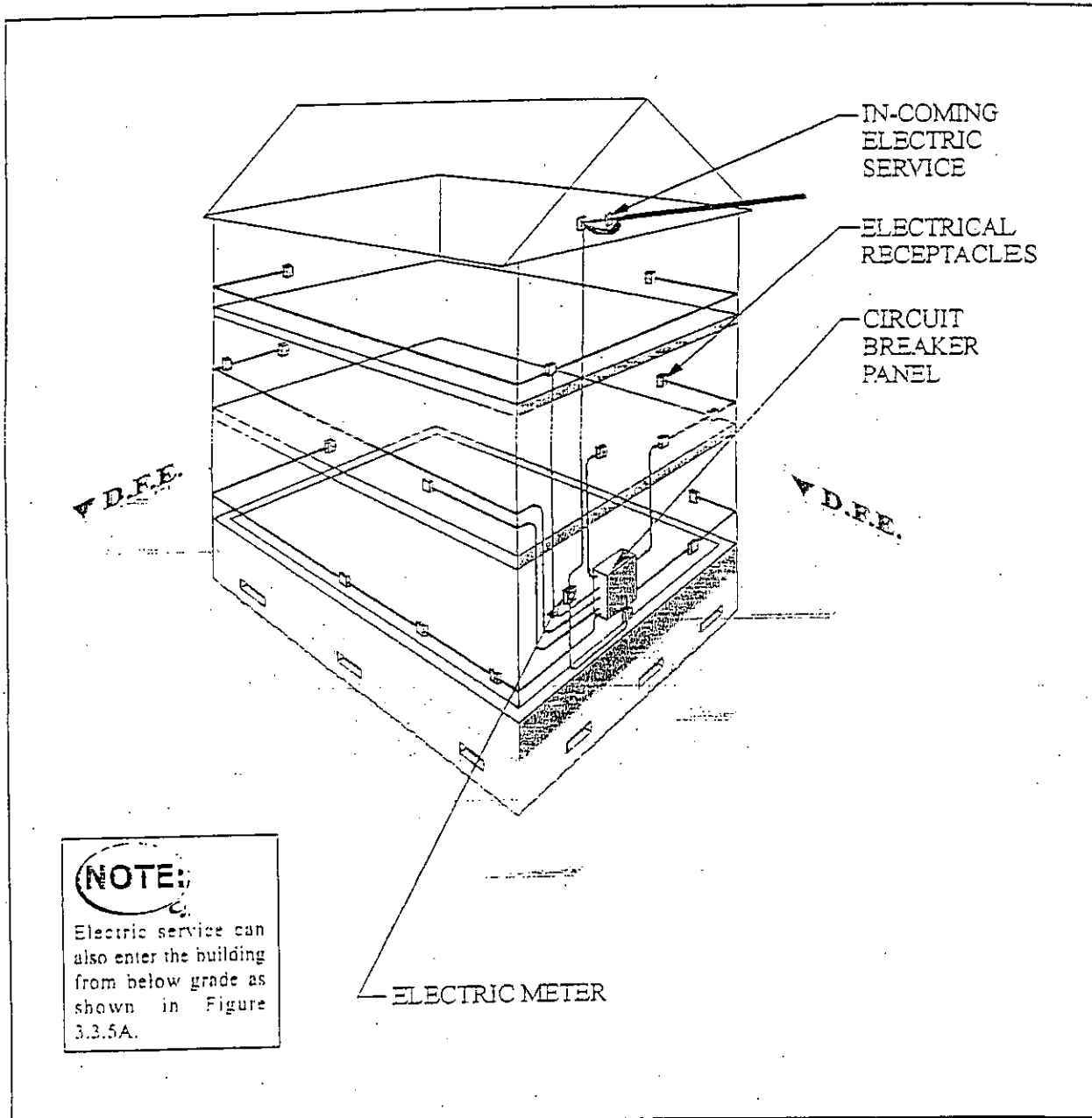
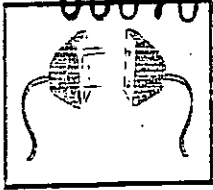
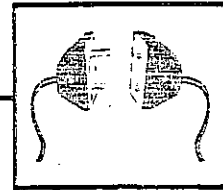


Figure 3.3.3: Structure with electrical components located above the DFE

000705



the DFE. For example, a watertight enclosed wall can be built around the electrical equipment that is located below the DFE. The top of the enclosure must be at or above the DFE and there must be a watertight access to the equipment for maintenance.

If electrical components that are supplied power by the distribution panel must remain below the DFE, they can be isolated using the distribution panel. The only electrical components that are permitted below the DFE are the minimum necessary for life/safety. Examples include smoke detectors, simple light fixtures, and switches and receptacles required for areas used for building access, parking, or storage. This design approach groups all of the components that lie beneath the DFE together on Ground Fault Interrupting Circuit (GFIC) breakers. These breakers should be clearly marked so that they can be disconnected in the event of rising floodwaters. This approach leaves other portions of the electrical system to function normally.

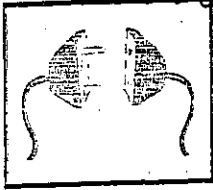
The major component that a building owner may not be able to properly locate above the DFE is the meter. Often utility companies want the meter located close to the ground so it is readily accessible for their inspection. Consult the local electrical utility company. Determine if the local electrical utility will permit the meter to be elevated above the DFE with access provided by a stairway and platform. If the company does not permit this, the meter can be located below the DFE, but must be elevated as high as the company permits.

**NOTE:**

All electrical equipment located below the DFE should be on separate Ground Fault Interrupting Circuits clearly marked on the breaker box. This makes it easy to shut off power to all the equipment below the DFE in case of a flood.

Control and utilization equipment in residential applications generally consists of receptacles, switches, and lighting components. In typical applications, control and utilization equipment will not come in contact with floodwaters because the NFIP requires that the lowest floor elevation be above the DFE. However, exceptions arise in situations where access to an elevated structure requires lighting fixtures/switches below the DFE. The utmost care must be taken to protect life and property in situations where equipment is located below the DFE. This section discusses some basic concepts related to control and utilization equipment as well as guidelines regarding floodproofing of the equipment.

000706



Standard duplex receptacles consist of two sockets, each accommodating a standard plug. In new installations, the three-slot grounded versions of these receptacles are required. Larger appliances sometimes require receptacles rated for additional voltage and amperes. The needs of the equipment that are to be powered dictate the type of plug that is used. If equipment must be located below the DFE, equipment of the lower voltage and amperage types should be used.

Standard wall switches typically control lower voltage applications and could therefore be used below the DFE to control code-required lighting fixtures. Devices that require larger voltages are typically wired directly to the distribution panel and controlled by the associated circuit breaker and need to be located above the DFE.

Residential lighting applications typically use standard voltage. Some commercial lighting applications, particularly fluorescents, use higher voltages. If codes specify that lighting must be provided in areas that are below the DFE, care should be taken to ensure that only low voltage (120V or less)/low amperage fixtures be used. They should be regulated by a GFI breaker that can be used to isolate the circuit in the event of flood conditions.

Wall switches, receptacles, and lighting components are typically interconnected using electric junction boxes and pressure connections. In flood-prone areas, these boxes should be constructed of non-corrosive materials and located above the DFE.

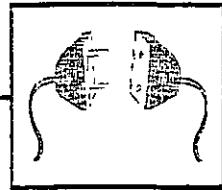
Some equipment is commercially available for marine applications. Depending on the design of the particular unit, it may not be designed to allow proper drainage and drying. If receptacles or light switches must be located below the DFE, they should be of the standard type and, as mentioned elsewhere in this section, will need to be replaced after inundation by floodwaters. This equipment is permitted below the DFE only to the extent required by code for life/safety.

### Elevation

As with all electrical components, the optimal approach when designing an electrical system is to locate all components above the DFE. All attempts

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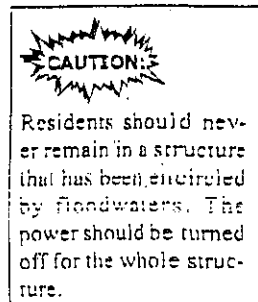
NEW AND EXISTING BUILDING UTILITY SYSTEMS



should be made to raise control and utilization equipment above the DFE. However, if this is not possible due to local code requirements, then the minimum necessary receptacles, switches, lights, and other components are permitted to be located below the DFE. The distribution panel shall be located above the DFE unless protected from floodwaters entering or accumulating within the panel box.

### Component Protection/Isolation

If control and utilization equipment must remain below the DFE, it should be isolated using the distribution panel. The components that lie beneath the DFE should be grouped together on GFIC breakers. In addition, these breakers should be clearly marked so that they can be disconnected in the event of rising floodwaters. This approach leaves other portions of the electrical system to function normally after the portions of the electrical system below the DFE have been disconnected for post-flooding examination and replacement of inundated components.



3.3.5 WIRING

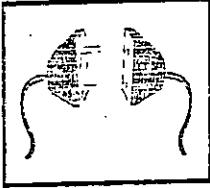
Wiring are the conveyance lines between the source of energy supply and the equipment that needs the electric energy supply. Most private residential wiring is of type TW Thermoplastic insulated weather resistant or type THW that is both heat and weather resistant. Table 3.3.5 shows the characteristics of insulated wires (conductors). Any of the wires rated for wet locations are permitted for installation below the DFE.

Individual circuit wire may run through metal or plastic pipes called conduits. More often, circuit wires are combined into cables. Such cables can be either non-metallic sheathed cable (Type NM) or steel armored cable (Type AC). The steel armored cable is usable only in dry indoor locations and is not permitted for installation below the DFE.

Wire connections are typically made with twist-on insulated connectors frequently called wire nuts. The general term for pressure-type connectors, such as wire nuts, is solderless connectors. Pressure connections are adequate for most applications.

15E





Trade Name	Type Letter	Maximum Operating Temperature	Application Provisions
Moisture and heat-resistant rubber	RHW*	75C 167F	Dry and wet locations
Thermoplastic	T	60C 140F	Dry locations
Moisture-resistant thermoplastic	TW*	60C 140F	Dry and wet locations
Heat-resistant thermoplastic	THHN	90C 194F	Dry locations
Moisture and heat-resistant thermoplastic	THW*	75C 167F	Dry and wet locations
Moisture and heat-resistant thermoplastic	THWN	75C 167F	Dry and wet locations
Moisture and heat-resistant cross-linked thermosetting polyethylene	XHWN*	90C 194F	Dry locations
		75C 167F	Wet locations
Silicone-asbestos	SA	90C 194F	Dry locations
Asbestos and varnished cambric	AVA	110C 230F	Dry locations only

Table 3.3.5: Characteristics of insulated wires (conductors)

Source: Extracted from the National Electrical Code

\*Suitable for Flood Zones

### Elevation and Component Protection

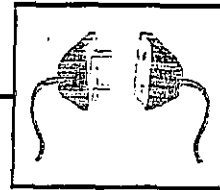
As with power handling equipment, the optimum choice when designing a wiring scenario for a building is to locate all wiring above the DFE, as was shown in Figure 3.3.3. However, in some developments, the wiring that services the buildings is routed underground. In this case, keeping the wiring above the DFE is not possible. The conduit should be of a watertight type and extend above the DFE before the wiring is released from the conduit. *Figure 3.3.5A* shows a residential structure with an underground electrical feed wire. Notice that the underground feed extends vertically above the DFE before the watertight conduit is breached. In addition, the top of the conduit is protected to prevent the infiltration of rain.

In some circumstances the wiring enters the house above the DFE but distribution wiring must extend below the DFE. *Figure 3.3.5B* shows an example

000709

FL: FEMA

# New and Substantially Improved Buildings Electrical Systems



where distribution wiring may be required to extend below the DFE. In situations where wiring must be extended below the DFE, the wiring should be encased in non-corrosive conduit. The conduits should be installed vertically to promote thorough drainage when the floodwaters recede. Wiring should be installed in conduits in these applications because it is easier to replace wiring that is damaged by floodwaters if it is installed in conduit.

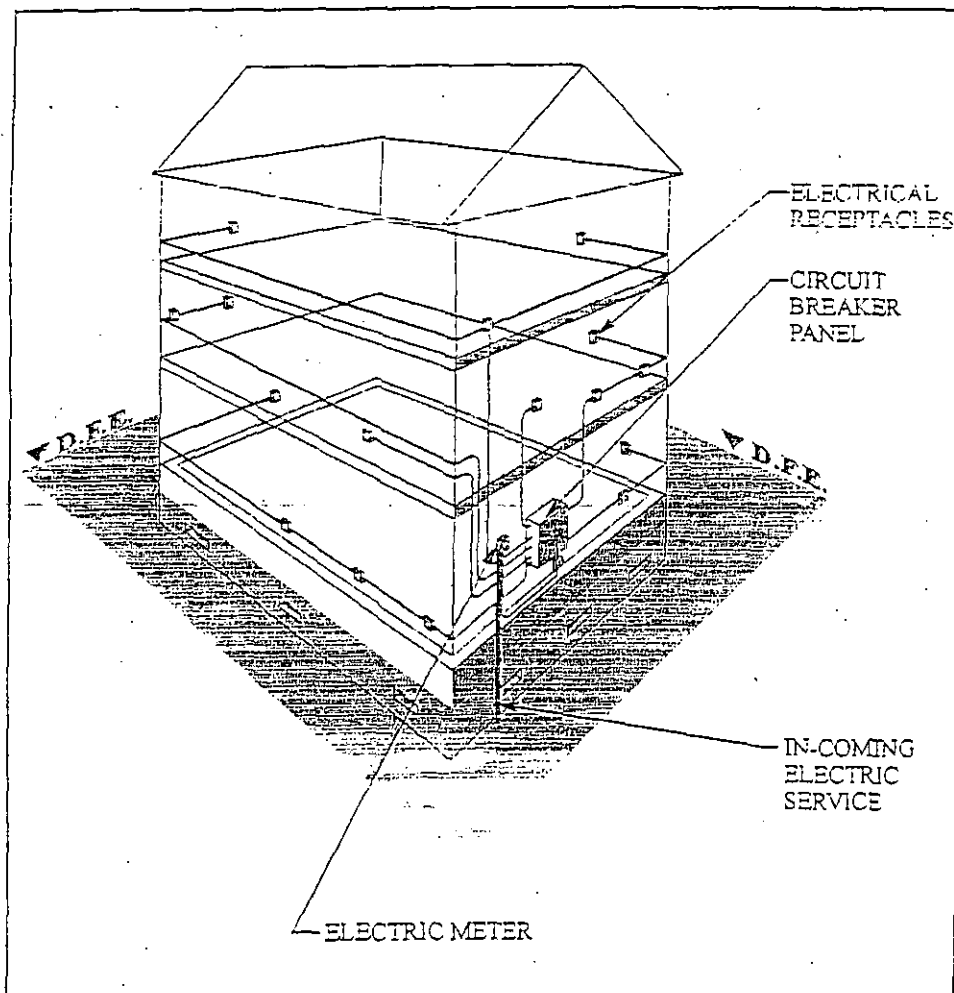


Figure 3.3.5A: Structure with underground electrical feed wire

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## Flood Damage Protection

For compliance with NFIP regulations, the design and construction of an elevator installation must include all possible steps for protecting the elevator equipment from flood damage.

### Hydraulic Elevators

The jack assembly for a hydraulic elevator (see Figure 1) will, by necessity, be located below the lowest floor and therefore generally below the BFE. The jack is located in a casing, and while it will resist damage from small amounts of water seepage, total inundation by floodwaters will usually result in contamination of the hydraulic oil and possible damage to the cylinders and seals of the jack. Salt water, because it is corrosive, can be particularly damaging. The hydraulic pump and reservoirs of the hydraulic elevator are also susceptible to water damage, but they can easily be located up to two floors above the jack and above the BFE as shown in Figure 1.

### Traction Elevators

For traction elevators (see Figure 2), the electric motor and most other equipment are normally located above the elevator shaft and would not be susceptible to flood damage. Some equipment, however, such as the counterweight roller guides, compensation cable and pulleys, and oil buffers, usually must be located at the bottom of the shaft. When such equipment cannot be located above the BFE, it must be constructed using flood-resistant materials where possible.

### Elevator Equipment

Some equipment common to all elevators will be damaged by floodwaters unless protected. The most obvious example is the elevator cab. Depending upon the size of the cab and the types of interior materials used, a cab may cost between \$5,000 and \$50,000. Flood damage, which can range from superficial to nearly a complete loss, can easily be avoided by keeping the cab above floodwaters. However, in most elevator control systems, the cab automatically descends to the lowest floor upon loss of electrical power. Installing a system of interlocking controls with one or more float switches in the elevator shaft to always keep the elevator cab from descending into floodwaters (see Figure 3) will result in a much safer system. A float switch system or an-

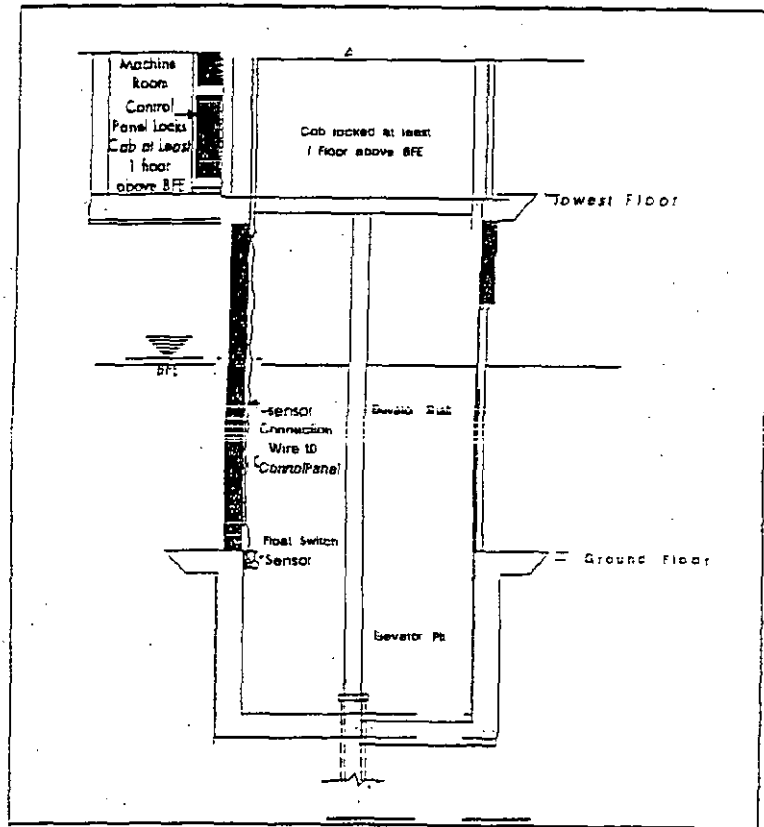


Figure 3. Float and Control Mechanism to Control Cab Descent

CRACKING (FLOOR) STAIR BRIDGE

SAND  
100 feet

DATE 1/12

Wall 1' above GFE

000711

↑  
↑  
Floor above  
1' above GFE

260 - 2% above GFE

2007

SUNSET 5083 SANTA MONICA AV  
PLAZA

Photo 10A

ACROSS STREET FROM  
OB NIER Apr. 60-70  
DARK UNDERGROUND

7  
000713

CITY OF SAN DIEGO, CALIFORNIA  
COUNCIL POLICY

CURRENT

SUBJECT: DEVELOPMENT WITHIN AREAS OF SPECIAL FLOOD HAZARD  
POLICY NO.: 600-14  
EFFECTIVE DATE: December 12, 2000

BACKGROUND:

Development within areas of special flood hazard is unwise from a health, safety and general welfare standpoint. If property in a floodplain is elevated to avoid inundation the resulting effect is an increase in the water surface elevation in other areas of the floodplain. In the absence of FEMA regulations, the accumulated effect of development can increase the potential damage to other existing or proposed developments.

The National Flood Insurance Act of 1968 established the Federal Flood Insurance Program which provides subsidized flood insurance for all property owners providing that the local government institutes adequate land use and development control measures for preventing and reducing property damage from flooding. The City of San Diego, by Council Resolution, indicated its desire to qualify for the Federal Flood Insurance Program and, in 1973, adopted appropriate floodplain regulatory zoning consisting of the Floodway (FW) and Floodplain Fringe (FPF) zones.

PURPOSE & INTENT:

To promote the public health, safety and general welfare, and to minimize public and private losses due to flooding and flood conditions in specific areas by provisions designed to:

- a. Protect human life and health;
- b. Provide Environmental Protection consistent with related City requirements;
- c. Minimize expenditure of public funds for flood control projects;
- d. Minimize the need for rescue and relief efforts associated with flooding;
- e. Minimize prolonged business interruptions;
- f. Minimize damage to public facilities and utilities located in areas of special flood hazard.

POLICY:

It is the Council's policy to regulate development within Special Flood Hazard Areas in accordance with the requirements of the Land Development Code. It is also the Council's policy to consider all applicable criteria as stated herein, in addition to the requirements of the Land Development Code, when approving deviations from the floodplain regulations. This policy shall apply to all areas of special flood hazard within the City of San Diego.

DEVIATION CRITERIA:

Where a deviation from the Environmentally Sensitive Lands Regulations of the Land Development Code (Sections 143.0145 and 143.0146) is requested, the decision maker shall consider all relevant factors, all technical evaluations, and all standards provided by the City Engineer in addition to the following conditions:



- a. A deviation shall not be approved within any designated floodway if any increase in flood levels during the base flood discharge would result. (See Diagram 1, Floodplain Schematic in Appendix A of Council Policy 600-14).
- b. A deviation may be approved only upon:
  1. a showing of good and sufficient cause;
  2. a determination that the proposed deviation is the minimum necessary to afford relief from special circumstances or condition of land, not of the applicant's making;
  3. a determination that failure to grant the deviation would result in exceptional hardship to the applicant; and
  4. a determination that the granting of a deviation will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- c. A deviation may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.
- d. Any applicant to whom a deviation is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the regulatory flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- e. In approving a deviation request the decision maker shall also consider the following factors:
  1. the danger that materials may be swept onto other lands to the injury of others;
  2. the danger of life and property due to flooding or erosion damage;
  3. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  4. the importance of the services provided by the proposed facility to the community;
  5. the necessity to the facility of a waterfront location, where applicable;
  6. the availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
  7. the compatibility of the proposed use with existing and anticipated development;

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CITY OF SAN DIEGO, CALIFORNIA  
**COUNCIL POLICY**

**CURRENT**

8. the relationship of the proposed use to the comprehensive plan and floodplain management program for the area;
9. the safety of access to the property in time of flood for ordinary and emergency vehicles;
10. the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and,
11. the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

HISTORY:

Adopted by Resolution R-203632 09/02/1971  
Amended by Resolution R-212811 03/13/1975  
Reaffirmed by Council  
Resolution R-214421 10/08/1975  
Amended by Resolution R-272880 02/14/1989  
Amended by Resolution R-289515 12/02/1997  
Amended by Resolution R-294394 12/12/2000



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CITY OF SAN DIEGO, CALIFORNIA  
COUNCIL POLICY

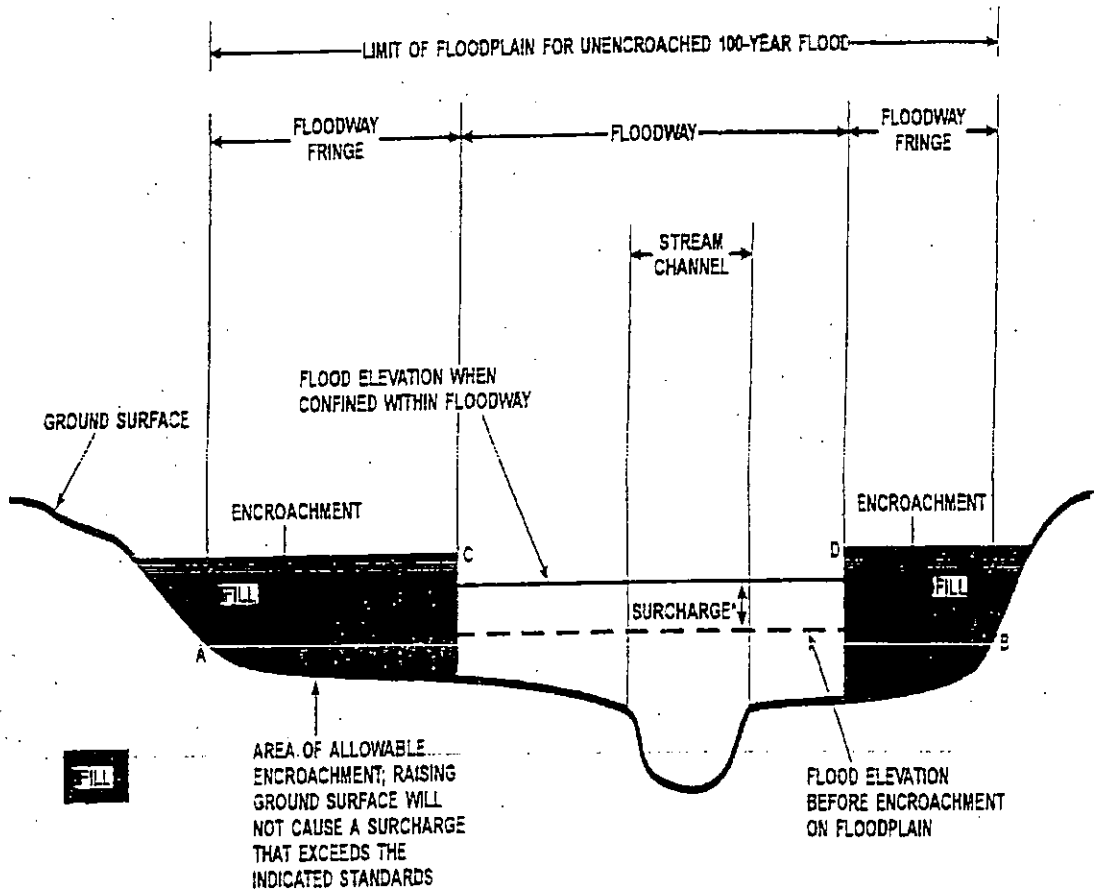
CURRENT

COUNCIL POLICY 600-14  
APPENDIX A

Diagram 1  
Floodplain Schematic

Note:

Reproduced from the Federal Emergency Management Agency (FEMA), Sample Text of a Flood Insurance Study, issued August 19, 1998.



LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT  
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT

\*SURCHARGE NOT TO EXCEED 1.5 FOOT (FEDERAL EMERGENCY MANAGEMENT AGENCY REQUIREMENT) OR LESSER HEIGHT IF SPECIFIED BY STATE

12 / david 000717

From: "davidstebbins" <davidstebbins@cox.net>  
To: "david stebbins" <redavidstebbins@cox.net>  
Sent: Thursday, April 12, 2007 3:57 PM  
Subject: Fw: E-Mail from Hornick to Steve Lindsay

----- Original Message -----

From: "Patrick Hooper" <phooper@sandiego.gov>  
To: <davidstebbins@cox.net>  
Sent: Thursday, April 12, 2007 3:38 PM  
Subject: E-Mail from Hornick to Steve Lindsay

>>> "Hornick, Michael" <michael.hornick@dhs.gov> 04/11/07 1:32 PM >>>  
Steve,

After discussion with you regarding the "Stebbins" residence proposal, I'm confident that city staff is pursuing a correct course of action with regard to your own variance procedures, floodplain management ordinance, and compliance with 44 CFR § 60.6, Variance and Exceptions. If you have any further questions concerning the NFIP, please call. Please keep me advised concerning eventual outcome. Regards,

Michael Hornick

FEMA RIX/NFIP

1111 Broadway, Suite 1200

Oakland, CA 94607

510-627-7260

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4/12/2007

000718

Code of Federal Regulations

Title 44, Volume 1

Revised as of October 1, 2003

From the U.S. Government Printing Office via GPO Access

CITE: 44CFR60.6

ATTACHMENT #4

Authentic  
For Den

## TITLE 44—EMERGENCY MANAGEMENT AND ASSISTANCE

### CHAPTER I—FEDERAL EMERGENCY MANAGEMENT AGENCY, DEPARTMENT OF HOMELAND SECURITY

#### PART 60—CRITERIA FOR LAND MANAGEMENT AND USE—Table of Contents

##### Subpart A—Requirements for Flood Plain Management Regulations

##### Sec. 60.6 Variances and exceptions.

(a) The Administrator does not set forth absolute criteria for granting variances from the criteria set forth in Sec. 60.3, 60.4, and 60.5. The issuance of a variance is for flood plain management purposes only. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a variance. The community, after examining the applicant's hardships, shall approve or disapprove a request. While the granting of variances generally is limited to a lot size less than one-half acre (as set forth in paragraph (a)(2) of this section), deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. The Administrator may review a community's findings justifying the granting of variances, and if that review indicates a pattern inconsistent with the objectives of sound flood plain management, the Administrator may take appropriate action under Sec. 59.24(b) of this subchapter. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. Procedures for the granting of variances by a community are as follows:

(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;

(2) Variances may be issued by a community for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the procedures of paragraphs (a) (3), (4), (5) and (6) of this section;

(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;

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18A

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;

(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section; and

(6) A community shall (i) maintain a record of all variance actions, including justification for their issuance, and (ii) report such variances issued in its annual or biennial report submitted to the Administrator.

(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria of paragraphs (a)(1) through (a)(4) of this section are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(b)

(1) The requirement that each flood-prone, mudslide (i.e., mudflow)-prone, and flood-related erosion prone community must adopt and submit adequate flood plain management regulations as a condition of initial and continued flood insurance eligibility is statutory and cannot be waived, and such regulations shall be adopted by a community within the time periods specified in Sec. 60.3, 60.4 or Sec. 60.5. However, certain exceptions from the standards contained in this subpart may be permitted where the Administrator recognizes that, because of extraordinary circumstances, local conditions may render the application of certain standards the cause for severe hardship and gross inequity for a particular community. Consequently, a community proposing the adoption of flood plain management regulations which vary from the standards set forth in Sec. 60.3, 60.4, or Sec. 60.5, shall explain in writing to the Administrator the nature and extent of and the reasons for the exception request and shall include sufficient supporting economic, environmental, topographic, hydrologic, and other scientific and technical data, and data with respect to the impact on public safety and the environment.

(2) The Administrator shall prepare a Special Environmental Clearance to determine whether the proposal for an exception under paragraph (b)(1) of this section will have significant impact on the human environment. The decision whether an Environmental Impact Statement or other environmental document will be prepared, will be made in accordance with the procedures set out in 44 CFR part 10. Ninety or more days may be required for an environmental quality clearance if the proposed exception will have significant impact on the human environment thereby requiring an EIS.

(c) A community may propose flood plain management measures which adopt standards for floodproofed residential basements below the base flood level in zones A1-30, AH, AO, and AE which are not subject to tidal flooding. Notwithstanding the requirements of paragraph (b) of this section the Administrator may approve the proposal provided that:

(1) The community has demonstrated that areas of special flood hazard in which basements will be permitted are subject to shallow and low velocity flooding and that there is adequate flood warning time to ensure that all residents are notified of impending floods. For the purposes of this paragraph flood characteristics must include:

(i) Flood depths that are five feet or less for developable lots that are contiguous to land above the base flood level and three feet or less for other lots;

(ii) Flood velocities that are five feet per second or less; and

(iii) Flood warning times that are 12 hours or greater. Flood warning times of two hours or greater may be approved if the community demonstrates that it has a flood warning system and emergency plan in operation that is adequate to ensure safe evacuation of flood plain residents.

(2) The community has adopted flood plain management measures that require that new construction and substantial improvements of residential structures with basements in zones A1-30, AH, AO, and AE shall:

(i) Be designed and built so that any basement area, together with attendant utilities and sanitary facilities below the floodproofed design level, is watertight with walls that are impermeable to the passage of water without human intervention. Basement walls shall be built with the capacity to resist hydrostatic and hydrodynamic loads and the effects of buoyancy resulting from flooding to the floodproofed design level, and shall be designed so that minimal damage will occur from floods that exceed that level. The floodproofed design level shall be an elevation one foot above the level of the base flood where the difference between the base flood and the 500-year flood is three feet or less and two feet above the level of the base flood where the difference is greater than three feet.

(ii) Have the top of the floor of any basement area no lower than five feet below the elevation of the base flood;

only  
for  
"common"  
stairways

(iii) Have the area surrounding the structure on all sides filled to or above the elevation of the base flood. Fill must be compacted with slopes protected by vegetative cover;

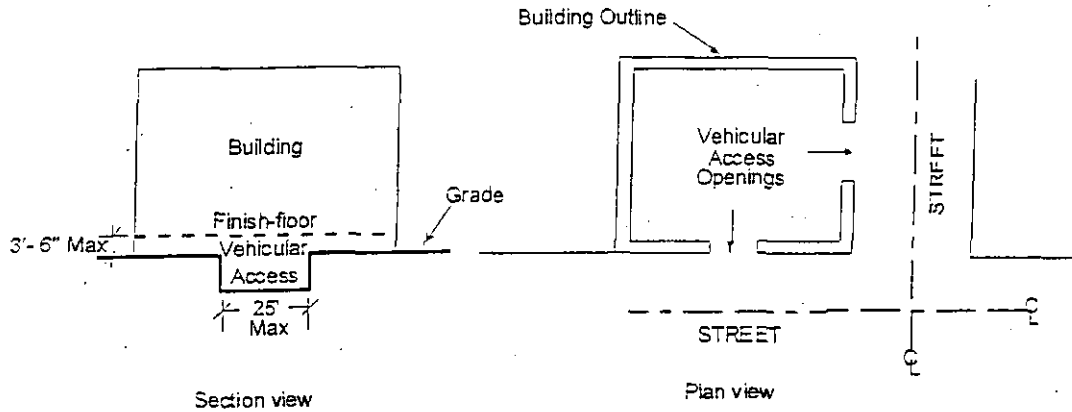
(iv) Have a registered professional engineer or architect develop or review the building's structural design, specifications, and plans, including consideration of the depth, velocity, and duration of flooding and type and permeability of soils at the building site, and certify that the basement design and methods of construction proposed are in accordance with accepted standards of practice for meeting the provisions of this paragraph;

(v) Be inspected by the building inspector or other authorized representative of the community to verify that the structure is built according to its design and those provisions of this section which are verifiable.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44543 and 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984; 50 FR 36025, Sept. 4, 1985; 51 FR 30308, Aug. 25, 1986; 54 FR 33550, Aug. 15, 1989]

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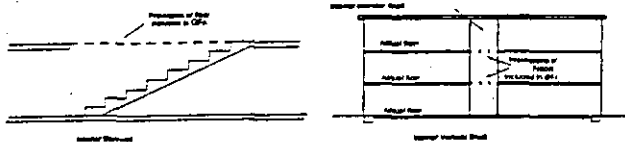
Diagram 113-02K  
Underground Parking Structures



- (4) *Gross floor area* includes enclosed exterior stairwells and enclosed exterior elevator shafts.
- (5) *Gross floor area* includes interior shafts such as elevator shafts, ventilation shafts, and other similar vertical shafts, interior stairwells, ramps, and mechanical equipment rooms. *Gross floor area* includes the area of the horizontal projection into the interior shaft of each floor in plan view that is served by the elevator, shaft, stairwell, or ramp, as shown in Diagram 113-02L.

Diagram 113-02L

Interior Stairwells and Vertical Shafts



- (6) *Gross floor area* includes on- or above-grade parking structures, garages, and carports that are constructed and maintained with less than two elevations of the element that are at least 75 percent completely open, as shown in Diagram 113-02M.

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PLANNING COMMISSION  
RESOLUTION NO. PC-XXXX  
COASTAL DEVELOPMENT PERMIT NO. 147134  
SITE DEVELOPMENT PERMIT NO. 389939  
STEBBINS RESIDENCE [MMRP]

WHEREAS, DAVID STEBBINS, Owner/Permittee, filed an application with the City of San Diego for a permit to demolish an existing one-story duplex, and construct a new, three-story single family residence above basement garage (as described in and by reference to the approved Exhibits "A" and corresponding conditions of approval for the associated Permits No. 147134 and 389939), on portions of a 0.057-acre site;

WHEREAS, the project site is located at 5166 West Point Loma Boulevard in the RM 2-4 Zone, Coastal Overlay Zone (appealable-area), Coastal Height Limit Overlay Zone, First Public Roadway, Beach Parking Impact Overlay Zone, Airport Approach Overlay Zone, Airport Environs Overlay Zone, and the 100-year Flood-plain Overlay Zone, within the Ocean Beach Precise Plan and Local Coastal Program Land Use Plan;

WHEREAS, the project site is legally described as Lot 14, Block 90 of Ocean Bay Beach Map No. 1189;

WHEREAS, on February 8, 2007, the Planning Commission of the City of San Diego considered Coastal Development Permit No. 147134, and Site Development Permit No. 389939, pursuant to the Land Development Code of the City of San Diego; NOW, THEREFORE,

BE IT RESOLVED by the Planning Commission of the City of San Diego as follows:

That the Planning Commission adopts the following written Findings, dated February 8, 2007.

FINDINGS:

Coastal Development Permit - Section 126.0708

1. The proposed coastal development will not encroach upon any existing physical access way that is legally used by the public or any proposed public accessway identified in a Local Coastal Program land use plan; and the proposed coastal development will enhance and protect public views to and along the ocean and other scenic coastal areas as specified in the Local Coastal Program land use plan.

All development would occur on private property, and would be within the 30-foot coastal height limit. Additionally, the proposed project will not encroach upon any adjacent existing physical access way used by the public nor will it adversely affect any proposed physical public accessway identified in the Local Coastal Program Land Use Plan. The subject property is not located within or near any designated public view corridors. Accordingly, the proposed project will not impact any public views to or along the ocean or other scenic coastal areas as specified in the Local Coastal Program land use plan.

**2. The proposed coastal development will not adversely affect environmentally sensitive lands.**

The project requires a Site Development Permit due to the presence of Environmentally Sensitive Lands. The project proposes the demolition of an existing one-story, duplex and the construction of a new three-story above basement single family residence. The City of San Diego conducted a complete environmental review of this site. A Mitigated Negative Declaration has been prepared for this project in accordance with State of California Environmental Quality Act (CEQA) guidelines, which preclude impact to these resources and Mitigation Monitoring and Reporting Program (MMRP) would be implemented to reduce potential historical resources (archaeology) impacts to a level below significance. Mitigation for archaeology was required as the project is located in an area with a high potential for subsurface archaeological resources. The project site is a relatively flat contains an existing structure, which is located approximately 8 feet above mean sea level (AMSL). The project site is not located within or adjacent to the Multi-Habitat Planning Area (MHPA) of the City's Multiple Species Conservation Program. The project site is located within an existing urbanized area. The proposed project was found to not have a significant effect on the environment. Therefore, the proposed coastal development will not adversely affect environmentally sensitive lands.

**3. The proposed coastal development is in conformity with the certified Local Coastal Program land use plan and complies with all regulations of the certified Implementation Program.**

City staff has reviewed the proposed project for conformity with the Local Coastal Program and has determined it is consistent with the recommended land use, design guidelines, and development standards in effect for this site per the adopted Ocean Beach Precise Plan and Local Coastal Program Land Use Plan which identifies the site for multi-family residential use at 15-25 dwelling units per acre, the project as proposed would be constructed at 17 dwelling units per acre.

The proposed development is to demolish an existing one-story, duplex and construct a new three-story above basement garage. The new structure will be constructed within the 100 Year Floodplain (*Special Flood Hazard Area*), and has a Base Flood Elevation of 9.6 feet mean sea level. The restrictions on development within the floodplain require that the lowest floor, including basement to be elevated at least 2 feet above the base flood elevation in accordance with San Diego Municipal Code (SDMC) section §143.0146(C)(6), while the Federal Emergency Management Agency (FEMA) requires that the finished floor elevation be at one or more feet above the base flood elevation (BFE). This project is requesting a Site Development Permit to allow a deviation to permit development of the residential structure, to be at 7.1 feet below the Base Flood Elevation.

Staff supports the proposed deviation due to the development limitations of the site and the flood-proofing conditions that would be applied to the permit to construct the lower level below the Base Flood Elevation. The deviation request will not increase the overall structure height, mass, and setbacks.



The proposed development is located in an area designated as being between the first public road and the Pacific Ocean, therefore views to the ocean shall be preserved. A visual corridor of not less than the side yard setbacks will be preserved to protect views toward Dog Beach and the San Diego River. In addition, this area is not designated as a view corridor or as a scenic resource. Public views to the ocean from this location will be maintained and potential public views from the first public roadway will not be impacted altered by the development. Accordingly, the proposed project will not impact any public views to or along the ocean or other scenic coastal areas. The project meets the intent of the guidelines for the Coastal Overlay and Coastal Height Limitation Overlay zones, and the Ocean Beach Precise Plan and Local Coastal Program Addendum. Therefore, the proposed coastal development would conform with the certified Local Coastal Program land use plan and, with an approved deviation, comply with all regulations of the certified Implementation Program.

**4. For every Coastal Development Permit issued for any coastal development between the nearest public road and the sea or the shoreline of any body of water located within the Coastal Overlay Zone the coastal development is in conformity with the public access and public recreation policies of Chapter 3 of the California Coastal Act.**

The proposed development is to demolish an existing one-story, duplex and construct a new three-story above basement garage. The subject property is designated as being between the first public road and the Pacific Ocean within the Coastal Overlay Zone.

The proposed project site backs up to and is adjacent to the Ocean Beach Park, designated in the Local Coastal Program as a public park and recreational area. Public access to the park area is available at the end of Voltaire Street and West Point Loma Boulevard. All development would occur on private property; therefore, the proposed project will not encroach upon the existing physical access way used by the public. Adequate off-street parking spaces will be provided on-site, thereby, eliminating any impacts to public parking. The proposed coastal development will conform to the public access and public recreation policies of Chapter 3 of the California Coastal Act.

**Site Development Permit - Section 126.0504(a)**

**1. The proposed development will not adversely affect the applicable land use plan;**

The proposed development is to demolish an existing one-story, duplex and construct a new three-story above basement garage. The project is within the 100-year floodplain, and is therefore within the Environmentally Sensitive Lands, requiring a Site Development Permit for the deviation to the Special Flood Hazard Area, per the City's Environmentally Sensitive Lands Regulations (SDMC Section 143.0110 Table 143-01A). The project is located in the appealable Coastal Overlay Zone requiring a Coastal Development Permit. The proposed development is located between the shoreline and the first public roadway; therefore views to the ocean shall be preserved. This project is located in the RM-2-4 Zone. The RM-2-4 Zone permits a maximum density of 1 dwelling unit for each 1,750 square feet of lot area. The project is in conformance with the underlying zoning, and conforms to the required floor area ratio, parking and setbacks. The proposed development will adhere to the required yard area setbacks pursuant to the Land Development Code. A Deed Restriction is a condition of approval to preserve a visual corridor

of not less than the side yard setbacks, in accordance with the requirements of San Diego Municipal Code Section 132.0403(b). The building will be under the maximum 30-foot Coastal Height Limit allowed by the zone.

The proposed project meets the intent, purpose, and goals of the underlying zone, and the Ocean Beach Precise Plan and Local Coastal Program Addendum. Therefore, the proposed development will not adversely affect the applicable land use plan.

**2. The proposed development will not be detrimental to the public health, safety, and welfare;**

The proposed development is to demolish an existing one-story, duplex and construct a new 1,749 square-foot, three-story single-family dwelling unit above an 819 square-foot basement garage resulting in a 2,565 square-foot structure, hardscape, landscape on a 2,500 square-foot site. The present units to be demolished may contain asbestos and lead-based paint and it could potentially pose a risk to human health and public safety. All demolition activities must be conducted in accordance with the San Diego County Air Pollution Control District (SDAPCD) and the California Code of Regulations Title 8 and 17 regarding the handling and disposal of asbestos-containing materials and lead-based paints. Therefore, special procedures during demolition shall be followed. As a condition of the permit, Notice is to be provided to the Air Pollution Control District prior to demolition. Failure to meet these requirements would result in the issuance of a Notice of Violation.

The permit as conditioned, shall floodproof all structures subject to inundation. The floodproofed structures must be constructed to meet the requirements of the Federal Insurance Administration's Technical Bulletin 3-93. The permit conditions added, to flood-proof the basement garage to the required height above grade, have been determined necessary to avoid potentially adverse impacts upon the health, safety and general welfare of persons residing in the area. All site drainage from the proposed development would be directed away from the adjacent properties into existing public drainage system located on West Point Loma Boulevard via a sump pump and sidewalk underlain.

Based on the above, human health and public safety impacts due to the demolition of the existing structure on site would be below a level of significant, and a Notice to the SDAPCD is required and would be added as a permit condition. Therefore, the proposed development will not be detrimental to the public health, safety and welfare.

**3. The proposed development will comply with the regulations of the Land Development Code;**

The proposed development includes the demolition of an existing single-level, 1,250 square-foot duplex residence and construction of a new 1749 square-foot three-level single dwelling unit with a subterranean parking garage. The project area is mapped within the 100 Year Floodplain (*Special Flood Hazard Area*), and has a Base Flood Elevation of 9.6 feet mean sea level. The restrictions on development within the floodplain require that the lowest floor, including basement to be elevated at least 2 feet above the base flood elevation in accordance with San Diego Municipal Code (SDMC) section §143.0146(C)(6), while the Federal Emergency

Management Agency (FEMA) requires that the finished floor elevation be at one or more feet above the base flood elevation (BFE), which would effectively render the ground floor uninhabitable for most properties in this area. In addition, the lot is sub-standard in that it is only 2,500 square feet in area where the minimum lot size allowed by the zone is 6,000 square feet. Additionally, the RM-2-4 zone requires that 25 percent of FAR be utilized for parking, unless the parking is provided underground. Therefore, the project is requesting a deviation to allow development of the residential structure, to be at 7.1 feet below the Base Flood Elevation. All structures subject to inundation shall be flood-proofed, and must be constructed to meet the requirements of the Federal Insurance Administration's Technical Bulletin 3-93.

An approved Site Development Permit would allow the deviation and would be consistent with the Land Development Code. Thus, the proposed project meets the intent, purpose, and goals of the underlying zone, and the Ocean Beach Precise Plan and Local Coastal Program Addendum, and complies to the maximum extent feasible with the regulations of the Land Development Code. Therefore, the proposed development will not adversely affect the applicable land use plan.

**Supplemental Findings. Environmentally Sensitive Lands(h)**

1. **The site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands;**

The project site is immediately south of the San Diego River mouth outfall at the Pacific Ocean and located within the 100 year floodplain and is therefore considered environmentally sensitive land, requiring a Site Development Permit for the deviation to the Special Flood Hazard Area. However, the previous site grading and construction of the existing duplex have completely disturbed the site. The property is relatively flat and does not include any sensitive topographical or biological resources. The site is neither within nor adjacent to Multi-Habitat Planning Area (MHPA) lands. A Mitigated Negative Declaration dated November 2, 2006, has been prepared for this project in accordance with State CEQA guidelines, and a Mitigation, Monitoring and Reporting Program is required for Archaeological Resources to reduce any potential impacts to below a level of significance.

A geotechnical analysis was prepared to address the liquefaction issue. This report concluded that the site is considered suitable for the proposed development provided the conditions in the Geotechnical Investigation Report are implemented. Therefore, the site is physically suitable for the design and siting of the proposed development and the development will result in minimum disturbance to environmentally sensitive lands.

2. **The proposed development will minimize the alteration of land forms and will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards;**

The proposed project will be sited on a 2,500 square-foot, developed lot. The majority of the site is relatively flat at 8 feet above MSL across an approximately 25 foot x 100 foot lot. The proposed development surrounded by existing residential development, within a seismically active region of California, and therefore, the potential exists for geologic hazards, such as

earthquakes and ground failure. Proper engineering design of the new structures would minimize potential for geologic impacts from regional hazards.

On site grading would occur for excavation of the building foundation and basement. The subterranean garage, which would have a depth of 6 feet below existing grades, would be at least two feet below the high groundwater table. However, the subject site is no greater danger from flooding than the adjacent, already developed sites and the proposed design mitigates potential flood related damage to the principal residential structure by raising the required living space floor area above the flood line per FEMA requirements, and flood-proof all structures subject to inundation in accordance with Technical Bulletin 3-93 of the Federal Insurance Administration. Therefore, the proposed development will not result in undue risk from geologic and erosional forces, flood hazards, or fire hazards.

**3. The proposed development will be sited and designed to prevent adverse impacts on any adjacent environmentally sensitive lands;**

The project site is within the 100 year floodplain and is therefore considered environmentally sensitive land. However, the previous site grading and construction of the existing duplex have completely disturbed the site. The property is relatively flat with an elevation of 8 feet above mean sea level and does not include any sensitive topographical or biological resources. The site is neither within nor adjacent to Multi-Habitat Planning Area (MHPA) lands. A Mitigated Negative Declaration dated November 2, 2006, has been prepared for this project in accordance with State CEQA guidelines, and a Mitigation, Monitoring and Reporting Program is required for Archaeological Resources to reduce any potential impacts to below a level of significance. Thus, with the implementation of the conditions in the Geotechnical Investigation the proposed project should not adversely affect environmentally sensitive lands.

**4. The proposed development will be consistent with the City of San Diego's Multiple species Conservation Program (MSCP) and subarea plan;**

The project proposes the demolition of the existing duplex and construction of a three-level single dwelling unit with a subterranean parking garage. The project site is south of, but not adjacent to, the Multiple Species Conservation Program (MSCP), Multiple Habitat Planning Area (MHPA) of the San Diego River floodway. Therefore, the project does not need to show consistency with Multiple Species Conservation Program Subarea Plan.

**5. The proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply; and**

The subject property is located approximately 450 feet away from the edge of the public beach, and is separated from the shoreline by a city parking lot. All site drainage from the proposed development would be directed away from the adjacent properties into existing public drainage system located on West Point Loma Boulevard via a sump pump and sidewalk underlain. Therefore, the proposed development will not contribute to the erosion of public beaches or adversely impact local shoreline sand supply.

6. The nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.

The project proposes the demolition of the existing duplex and construction of a three-level single dwelling unit with a subterranean parking garage. An environmental analysis was performed and Mitigated Negative Declaration (MND) No. 51076 was prepared, which would mitigate potentially significant archaeological resource impacts to below a level of significance. The MND also discusses the location of the project being within the 100-year floodplain of the San Diego River according to the Federal Emergency Management Agency (FEMA) map. The permit and MMRP prepared for this project include conditions, environmental mitigation measures, and exhibits of approval relevant to achieving compliance with the applicable regulations of the Municipal Code in effect for this project. These conditions have been determined necessary to avoid potentially adverse impacts upon the health, safety and general welfare of persons residing or working in the area. These conditions include requirements pertaining to landscape standards, noise, lighting restrictions, public view, public right of way improvements, flood-proofing the structure and raising the habitable space above flood line, which provides evidence that the impact is not significant or is otherwise mitigated to below a level of significance. Therefore, the nature and extent of mitigation required as a condition of the permit is reasonably related to, and calculated to alleviate, negative impacts created by the proposed development.

Supplemental Findings. Environmentally Sensitive Lands Deviations(c)

1. There are no feasible measures that can further minimize the potential adverse affects on environmentally sensitive lands; and

The project area is mapped within the 100-year floodplain and the restrictions on development within the floodplain require that the first floor be 2 feet above the base flood elevation. The sub-standard lot of 2,500 square feet is less than 42% of the minimum area required for a legal lot in the RM-2-4 zone. These conditions and the fact that 25 percent of the 0.70 floor area ratio (FAR) allowed by the zone is required to be used for parking, unless the parking is provided underground, led the applicant to provide an underground garage that will be flood proofed according to the requirements of the Federal Emergency Management Agency (FEMA) in order to avoid having part of the ground floor level devoted to parking, which, in turn, would have drastically reduced habitable space. The project proposal includes a modest increase in square footage from 1,250 to 1,749 and to allow for development to be below the base flood elevation. Raising the finished floor elevation two feet above the BFE will not change the situation with regard to any adverse effects. The property is protected by a levee from floods that may come from the San Diego River. Any flooding would be of a low velocity and shallow and more likely from run off from the hill above Ocean Beach than from the river or the ocean.

Building the structure below the BFE or two-feet above, will not have implications to environmentally sensitive lands, therefore there are no feasible measures that can further minimize the potential adverse affects on environmentally sensitive lands.

2. The proposed deviation is the minimum necessary to afford relief from special circumstances or conditions of the land, not of the applicant's making

The proposed development is taking place within the 100 Year Floodplain (*Special Flood Hazard Area*), and the proposed new development is not in conformance with SDMC section §143.0146(C)(6) which requires a development within a *Special Flood Hazard Area* to have the lowest floor, including basement, elevated at least 2 feet above the base flood elevation. The Federal Emergency Management Agency (FEMA) requires that the finished floor elevation be at one or more feet above the base flood elevation (BFE). This project is requesting a deviation to allow development of the residential structure, to be at 7.1 feet below the Base Flood Elevation. The subterranean garage, which would have a depth of 6 feet below existing grades, would be at least two feet below the high groundwater table. However, all structures subject to inundation shall be flood-proofed and meet the requirements of the Federal Insurance Administration's Technical Bulletin 3-93. The proposed basement parking area is the minimum necessary to exclude the parking from the FAR, to allow for a reasonably sized residence on this sub-standard lot. In addition, the applicant states that there is hydrological evidence that flooding if any that may occur in a 100 years flood event would be minor and easily handled by the proposed flood proofing. The property is protected by a levee from floods that may come from the San Diego River. Flooding in this area would be due to lack of capacity of the storm water system. Flooding in a 100 year event in this area is very low velocity (ponding only) does not come from the river or the beach as is commonly believed but from run off from the streets on the hill above ocean beach. Additionally, there is evidence that recent and significant storm water repairs in this area should significantly reduce the already low risk. The proposed BFE will not have an adverse effect on environmentally sensitive lands and provide the minimum necessary to afford relief from special circumstances or conditions of the land.

**Supplemental Findings. Environmentally Sensitive Lands Deviation from Federal Emergency Management Agency Regulations(d)**

1. The City engineer has determined that the proposed development, within any designated floodway will not result in an increase flood levels during the base flood discharge;

The proposed development including the flood-proofed basement garage is taking place within the 100 Year Floodplain and not within the Floodway. Therefore, this finding is not applicable to the subject project.

2. The City engineer has determined that the deviation would not result in additional threats to the public safety, extraordinary public expense, or create a public nuisance.

The proposed development is to demolish an existing one-story, duplex and construct a new 1,749 square-foot, three-story single-family dwelling unit above an 819 square-foot basement garage. The permit as conditioned, shall flood-proof all structures subject to inundation. The owner shall bear all costs of flood-proofing, and there will be no expense to the city.

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The City Engineer has determined that the deviation to allow the structure to be built under the BFE rather than 2'-0" above as required by the Land Development Code will not cause an increase in the flood height. The elevation requirement of the Land Development Code is for the protection of the structures and its contents. Lessening that requirement does not result in additional threats to public safety, extraordinary public expense, or create a public nuisance.

BE IT FURTHER RESOLVED that, based on the findings hereinbefore adopted by the Planning Commission, Coastal Development Permit No. 147134 and Site Development Permit No. 389939 are hereby GRANTED by the Planning Commission to the referenced Owner/Permittee, in the form, exhibits, terms and conditions as set forth in Permit No. 147134/389939, a copy of which is attached hereto and made a part hereof.

---

LAILA ISKANDAR  
Development Project Manager  
Development Services

Adopted on: February 8, 2007

Job Order No. 42-3454

cc: Legislative Recorder, Planning Department

AMES IV. ISARK

11/8/71

P.O. Box 7334

000731

Chula Vista, CA  
91912

Re: 5166 W. Point Loma

DEAR COUNCIL

I AM WRITING IN SUPPORT

OF DAVID STEBBINS AND HIS PROPOSED  
PROJECT AT 5166 WEST POINT LOMA BLVD.

I AM THE OWNER OF 5170 + 70 1/2 WEST  
POINT LOMA FOR 17 YEARS. MR. STEBBINS  
HAS GONE OVER HIS PLANS WITH

ME AND AS PERSON WITH A  
BACKGROUND OF CONSTRUCTION, I AM  
FAMILIAR WITH THE COMPLEXITIES.

I COMPLETELY SUPPORT MR. STEBBINS  
AND WOULD LIKE TO REBUILD MY

PLACE WHEN I RETIRE. IT IS TIME  
TO CLEAN UP THIS AREA THAT HAS

LONG BEEN INFESTED WITH DRUG ADDICTS.  
I HAVE ATTENDED ALL THE MEETINGS SO FAR  
THIS AND WILL ATTEND ALL FUTURE ONES

JAMES M. BUSH  
JAMES M. BUSH



000732

ROBERT J. CALLAHAN

ATTORNEY AT LAW  
SUITE 1442  
53 WEST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604  
PHONE (312) 322-9000  
FAX (312) 427-1269

April 18, 2007

RE: 5166 W. Point Loma

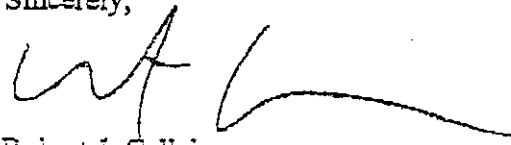
San Diego City Council  
202 C Street, 12<sup>th</sup> Floor  
San Diego, Ca. 92101

Dear Council,

I am writing this letter to express my support for David Stebbins and the proposed project at 5166 W. Point Loma. I am the owner of 5184 and 5184 1/2 W. Point Loma. I have met with David personally, and he has provided me with the proposed plans and related documentation. I also previously attended the meeting of the Ocean Beach planning board to express my support of the project. I am full aware of the complexities of the building process and I fully support Mr. Stebbins and the proposed project.

I am currently residing out of state or I would appear personally at the council hearing. I plan to spend my retirement years in Ocean Beach, and I believe that David's project will be an asset to the Ocean Beach community. It particularly will be an improvement to the area which was some years ago described to me as "crack alley". I am available at any time if you have any questions or need assistance with this issue.

Sincerely,



Robert J. Callahan

22 B

david 000733

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From: "davidstebbins" <davidstebbins@cox.net>  
To: "david stebbins" <redavidstebbins@cox.net>  
Sent: Tuesday, April 17, 2007 11:37 PM  
Subject: Fw: Letter of Support

----- Original Message -----

From: Sanchez, Mira  
To: DavidStebbins@cox.net  
Sent: Monday, April 16, 2007 12:41 PM  
Subject: Letter of Support

Date: April 16, 2007

Dear OB Planning Commission,

My name is Mira L. Sanchez and I am the owner (8 years now) of 5172 West Pt. Loma Blvd and wanted to write you this letter supporting David Stebbin's house remodel project. I have seen the concept drawings and can only say that this would do a great deal for us as homeowners and for the beautification of OB.

*Its time that the area sees some gentrification and David's project is a step in the right direction.*

*I cannot personally be on hand to support the next meeting, but ask that you accept this letter as my support and approval of David's project.*

Regards,

Mira L. Sanchez  
Intel Corporation  
Optical Platform Division  
Commodity Manager  
510-578-5628  
858-705-0327 (cell)  
[mira.sanchez@intel.com](mailto:mira.sanchez@intel.com)

22C

4/18/2007

000734

April 22, 2007

To: Councilman Kevin Faulconer  
202 C St. ms #10  
San Diego, Ca. 92101

CC to: David Stebbins  
4948 Voltaire St. Ste 1-A  
San Diego, Ca. 92107

Dear Mr. Faulconer,

My wife and I own the property directly next door to Mr. Stebbins proposed project. Our address is 5164 W. Point Loma Blvd. As you know, our lot and structure are essentially identical. We are in favor of Mr. Stebbins plans to improve his property. We also feel this will be a benefit to the community. We would very much like to see the structures on both sides of us follow his lead. To my knowledge, these one story structures were built in the 50's and are over due for improvement.

Alvin and Joan Cox

PS: We attended Michael Aguirre's talk at the San Diego Yacht and the open day ceremonies and noted your attendance at both. Thank you very much for your work with our beautiful city and our yacht club.

22D

000735

TO: Whom It May Concern

I am a property owner in Ocean Beach. I support the project known as The Stebbins residence (pts51076) located at 5166 W. Point Loma Blvd.

I ask that you vote in favor of this project.

Genevieve Granillo

Genevieve Granillo

name /

4-26-06

dated

7189 Cole Ct

address

SAN DIEGO, CA 92117

22E

000736

April 29, 2006

Dear Mr. Stetson:

I am pleased to learn that you  
plan on redeveloping your property.  
Please contact me at 202-462-2773

22 E. 5th St. N.W.

Washington, D.C. 20004

22 F

000737

TO: Whom It May Concern

I am a property owner in Ocean Beach. I support the project known as The Stebbins residence (pts 51076) located at 5166 W. Point Loma Blvd.

I ask that you vote in favor of this project.

M. M. M.  
name

4-24-06  
dated

5186 W. Point Loma  
address

We Plan on being there

M. M. M.

226

000738

TO: Whom It May Concern

I am a property owner in Ocean Beach. I support the project known as The Stebbins residence (pts 51076) located at 5166 W. Point Loma Blvd.

I ask that you vote in favor of this project.

  
name

4/25/06  
dated

5178 West Point Loma Blvd  
address

Owner of Duplex.

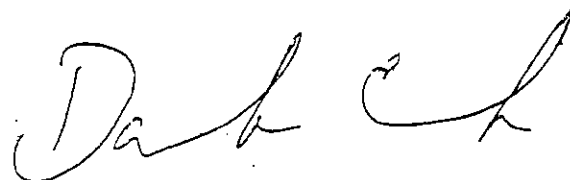
\*I Fully Support Your Project  
David. Good For You For helping  
make Ocean Beach a Beautifully  
Improved Place.

I am out of Town on May 3rd

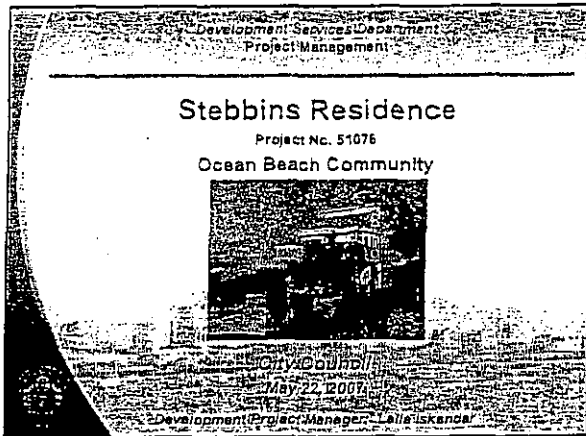
Call Me anytime

619 851-8484

2214



000739



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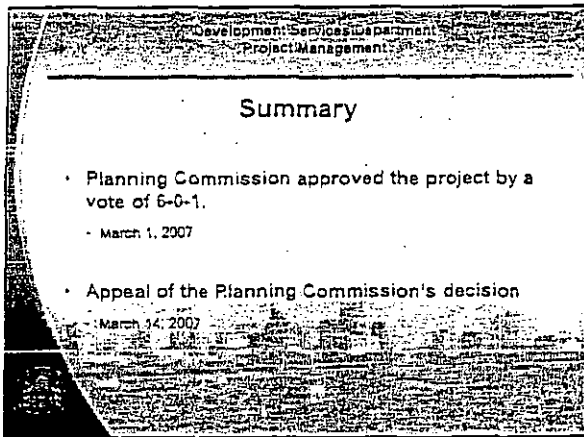
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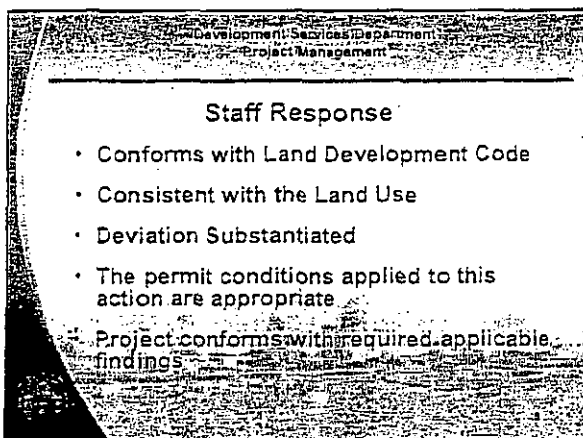
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000740

Development Services Department  
Project Management

### Project Scope

- Site Features
  - > Developed with 2-dwelling units duplex structure.
  - > No off-street parking spaces.
- Project Features
  - > Demolition of an existing one-story duplex.
  - > Construction of a three-story single family residence above basement garage.
  - > Deviation from the regulations for Special Flood Hazard Areas.
- Required Permits
  - > Coastal Development Permit
  - > Site Development Permit

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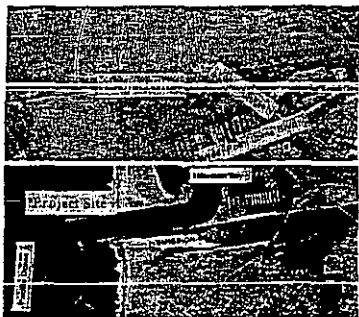
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Development Services Department  
Project Management



Aerial Photo  
PROJECT NUMBER: 000740  
3164 W. PASE LANE STE.

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Development Services Department  
Project Management

2,500 square foot




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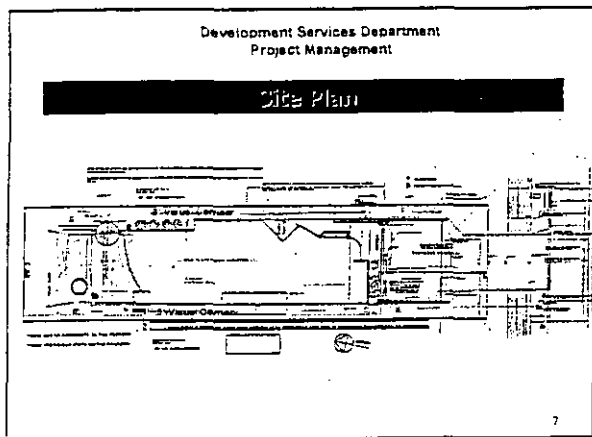
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000741



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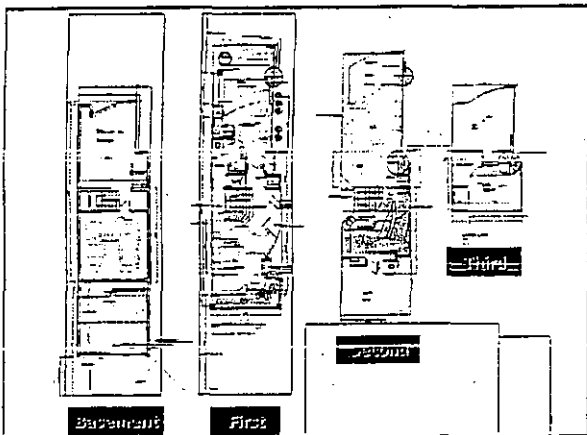
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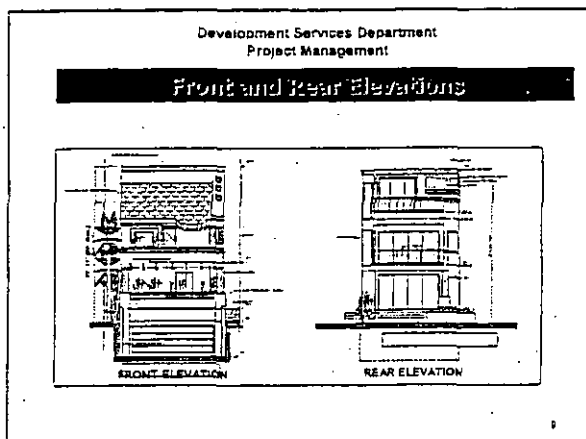
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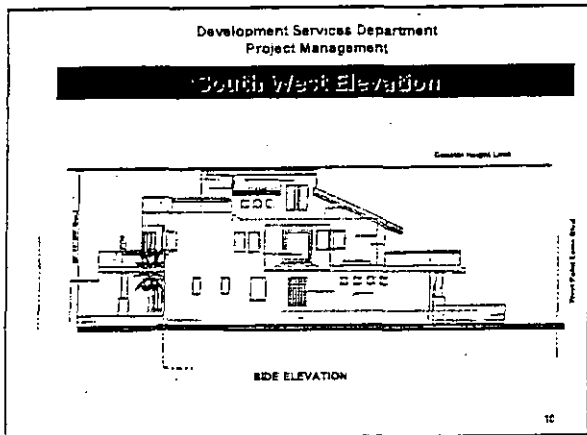
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000742



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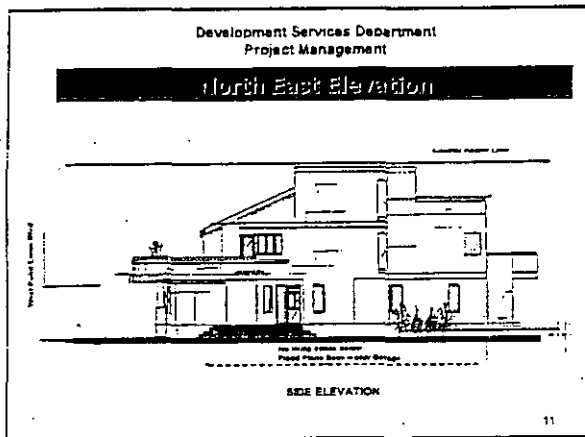
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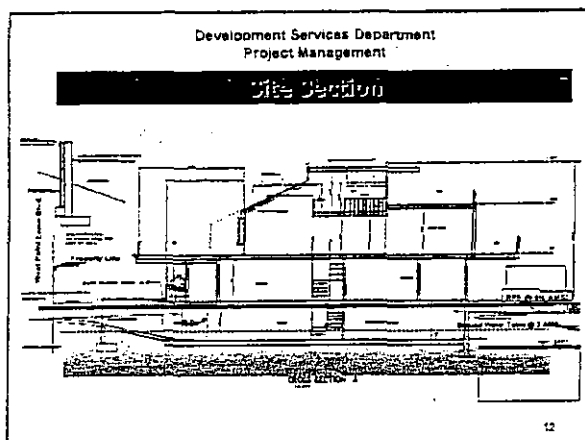
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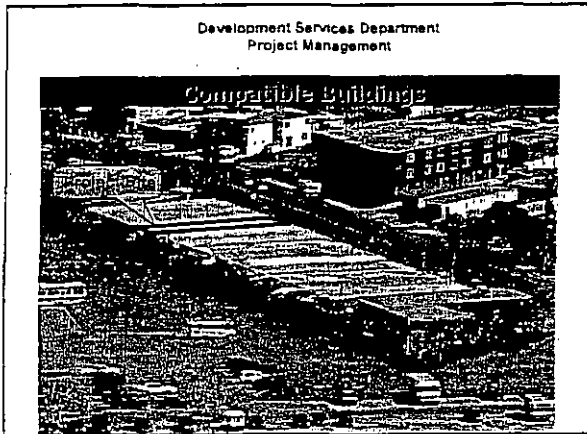
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000743



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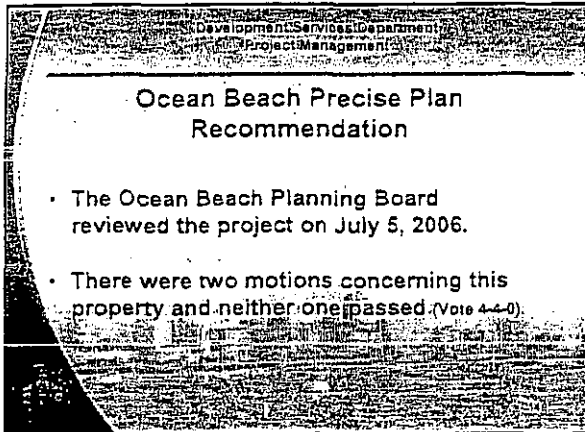
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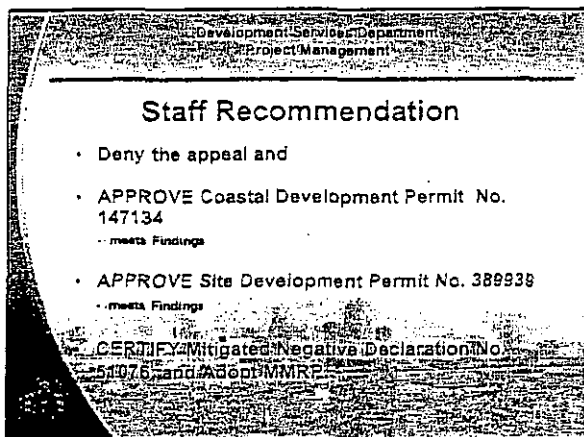
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From: "Darin Ricco" <darin.ricco@century21.com>  
To: <hearings1@sandiego.gov>  
Date: 5/8/2007 1:25 PM  
Subject: May 22 Hearing RE Stebbins Residence Costal Development Permit No. 147134

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Dear City Council,

This letter is written to show my strong disapproval of the Planning Commission's decision in approving an application for a CDP and a SDP for the construction of a three story residence at 5166 West Point Loma Blvd. This block of West Point Loma Blvd that 5166 is located on consists of entirely one story duplexes that are adjacent to the grass area across the parking lot from dog beach. This grass area is used as a gathering place, picnic area, dog walking area and overall nice place to enjoy the San Diego weather. The row of duplexes each have their charming characteristics developed over the years by their owners and blend into the Ocean Beach scenery. The construction of such a large home on a small 2500 sq. ft. lot would disturb the balance of this area. From the other side of 5166 West P.L. Blvd., looking towards the beach, locals are able to see the palm trees and sail boat masts over the row of duplexes giving the area that unique beach feel that everyone moves here and visits here for. The construction of a three story home would not only block this coveted view loved by many locals and tourists alike, but would destroy the harmony of the block both visually and, during construction, acoustically. The construction could furthermore deter tourists from coming to Ocean Beach, Dog Beach specifically, and they could decide upon another beach in the stead, taking away from the local economy. Lastly, if this project is approved, it would undoubtedly pave the way for the other owners on the block to do the same leading to more construction, more eyesores, less views, more noise pollution, less tourists, less revenue, and an overall destruction of the peace and harmony we have come to love by Dog Beach. I, Darin Ricco, as a resident of Dog Beach for over five years, and as a real estate agent myself, know the value of neighborhood pride. This project threatens to destroy that pride, and this is why I am strongly opposed to Stebbins Residence project. Thank you for listening to my thoughts and opinion.

Darin Ricco/Realtor

619-846-8249

darin.ricco@century21.com

000745

May 17, 2007

MAYOR AND CITY COUNCIL  
ATTN: CITY CLERK  
ADMINISTRATION BUILDING  
202 "C" STREET  
SAN DIEGO, CA 92101-3862  
MAIL STSTION 2A

RE: STEBBINS RESIDENCE PROJECT NO. #51076  
APPEAL TO CITY COUNCIL

Dear Mr. Sanders, City Council, and City of San Diego Development Services Staff:

We are asking you to not approve the STEBBINS RESIDENCE PROJECT #51076, on the basis of the bulk and scale of the proposed project, as it would not be in compliance with the Ocean Beach Precise Plan, effective, as of this date.

We are also asking you not to approve this project on the basis of the deviation from the regulations for Special Flood Hazard Areas, (the mouth of the San Diego River Flood Channel), to permit development of this residential structure at 7.1 feet below the Base Flood Elevation where two (2) feet above the Base Flood Elevation is required.

We are asking that you please take a closer look at this project and to be aware of the environmental sensitive mitigating factors, involved in approving this project, as proposed, for the City of San Diego.

Thank you for your consideration, on this matter.

Sincerely,

Nancy Taylor  
Elected Member of Ocean Beach Planning Board  
District One

HEARINGS1-HEARINGS1 - RE: STEBBINS RESIDENCE- PROJECT #51076 CITY COUNCIL  
 PUBLIC HEARING APPEAL MAY 22, 2007

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From: "Jane Gawronski" <jgawronski@earthlink.net>  
 To: "Nancy Taylor" <ntaylor17@cox.net>, <Hearings1@sandiego.gov>  
 Date: 5/17/2007 8:02 PM  
 Subject: RE: STEBBINS RESIDENCE- PROJECT #51076 CITY COUNCIL PUBLIC HEARING  
 APPEAL MAY 22, 2007  
 CC: "Bill Wilson" <wmwilson322@hotmail.com>, "Landry Watson"  
 <dro\_watson@yahoo.com>, <cityattorney@sandiego.gov>, "Amanda Lopez"  
 <amandalopez27@yahoo.com>, "Andra Loo" <obandra@yahoo.com>, "Bill Bushe"  
 <billbushe@yahoo.com>, "Brittany Taylor" <BT1118@aol.com>, "Craig Klein"  
 <craigklein1@cox.net>, "George Murphy" <obgeorge@nethere.com>, "Giovanni Ingolia"  
 <gingolia@hotmail.com>, "Joshua Richman" <jjrichman@gmail.com>, "Michael Taylor"  
 <mdtaylor@marcusmillichap.com>, "Shane Finneran" <shane@wavelengthclothing.com>,  
 "Tom Gawronski" <tgawronski@earthlink.net>, "Vance Spurrier" <obvance@yahoo.com>

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Hi Nancy, Thank you very much for sending this out. I am one hundred percent in agreement with the position you have expressed. I've added Mike Aguirre's address since this has some legal implications for ignoring the FEMA guidelines.

Unfortunately I will be in Turkey and unavailable for this hearing.

Jane

---

From: Nancy Taylor [mailto:ntaylor17@cox.net]  
 Sent: Thursday, May 17, 2007 7:23 PM  
 To: Hearings1@sandiego.gov  
 Cc: Bill Wilson; Landry Watson; Jane Gawronski  
 Subject: STEBBINS RESIDENCE- PROJECT #51076 CITY COUNCIL PUBLIC HEARING APPEAL MAY 22, 2007

000747

From: <nsuserid@turing.sannet.gov>  
To: <cityclerk@sandiego.gov>  
Date: 5/21/2007 9:45:40 PM  
Subject: San Diego City Council Meeting Agenda Comment Form

San Diego City Council Meeting Agenda Comment Form  
Submitted on Monday, May 21, 2007 at 21:45:20

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name: Michelle Y. Ward

e-mail: michelleyward@hotmail.com

address: 5072 Rebel Rd.

city: San Diego

state: CA

zip: 92117

areacode: 858

telephone: 354-3188

source: San Diego City Council Meeting Agenda Comment Form at <http://www.sandiego.gov/city-council/docket-comment.shtml>

agendaitem: item #334 Tuesday May 22nd

comments:

I am in favor of Item 334, Stebbins residence.

Ocean Beach hasn't changed much at all since the late 70's. There are several parts of OB that has grown and changed with the times. This section of OB has somehow remained to stay pretty much the same and has become somewhat rigid in its ways. It is time that it too starts its metamorphosis into a more stable appearing community.

OB has always prided its self in being "family" like to its fellow OB'ecions. Unfortunately by Mr. Watson's opposition and appeal to this project he is putting forth the image that is quite hypocritical of what he himself said in earlier testimony in regards to the family feeling in the neighborhood. Apparently he does not include Mr. Stebbins in this "family".

The project has passed the sniff test with Staff in regards to past concerns re: flood proofing, bulk/scale, etc. Mr. Stebbins has done a stellar job at designing a structure that will both be pleasant to the eye in the community and be comfortable as a home. This project can only set new standards for Ocean Beach and by this the Ocean Beach community should be grateful.

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REMOTE\_ADDR: 66.27.85.139

HTTP\_USER\_AGENT: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1)



**000748**

**From:** "Kathleen Blavatt" <kblavatt@cox.net>  
**To:** <cityclerk@sandiego.gov>  
**Date:** 6/18/2007 6:35:20 PM  
**Subject:** Tuesday, June 19, 2007 ITEM-331

Dear Council Members Scott Peters, Kevin Faulcner, Toni Atkins, Tony Young, Brian Maienschein, Donna Frye, Jim Madaffer, Ben Hueso  
CC: San Diego City Clerk

Please adopt a resolution to grant the appeal on the Tuesday, June 19, 2007 ITEM-331: Stebbins Residence.

This project has become a major topic of conversation and concern in the Ocean Beach Community. The many residents that have spoken to me feel this resident goes against the community character/community plan, and is also a problem that it is the flood plan.

I have had an office and lived on Ocean Beach off and on for a number of years. The flood concern is a major problem that the City must not ignore. I have personally seen the problems and major damaged caused in the blocks near the beaches on OB.

During El Nino there was water over 2 ft. high racing down these streets. The infrastructure here can't handle big floods.

Setting precedence to build underground garages is a bad idea for both the City and residence.

A few years back, Gail Goldberg ran a workshop on what the residences Ocean Beach wanted to see in their Community Plan. "Keeping the Character of Ocean Beach" was high on the list. This was also made clear years earlier when hundreds of residence came out and opposed becoming a Redevelopment Project.

Ocean Beach has cleaned up but itself, yet still retains its beach community character, history, mom and pop shops... it is truly a village.

Dog Beach was rated one of the "Top 10 Beaches in California". It feels like all people are welcome there. The surrounding smaller single and double story homes help make it feel approachable. Large bulky homes could take away from classic beach town appeal that attracts tourist and San Diegans to this part of OB.

Landry Watson has laid out the many legal, environmental and community reasons for opposing such a project. Please grant the appeal.

Sincerely,

Kathleen Blavatt, Ocean Beach

## Stebbins Appeal\*

000749

## CONTENTS:

## 1. SAN DIEGO MUNICIPAL CODE FLOODPLAIN REGULATIONS

- ✓ 2. FEMA Technical Bulletin stating that underground parking of residences in flood plains is "prohibited."
- 3. March 2, 2007 email from Gregor Blackburn, FEMA Region 9, Senior Natural Hazards Program Specialist, answering question about variances for parking under residences in a flood plain: "strictly prohibited."
- 4. CFR 44 60.6 FEMA regulations stating requirements for granting of variances including "extreme hardship."
- ✓ 5. October 25 letter from David Stebbins to City Project Manager Iskandar requesting a variance for parking under a residence in a floodplain. (2 pages)
- 6. Ms. Iskandar's November 5, 2005 reply denying request for variance. This information is not in the MND.
- ✓ 7. Ocean Beach Precise Plan, P. 116, conclusively showing that applicant can build the proposed size residence WITHOUT THE VARIANCE (1750 square feet; FAR of .7, and 2 surface parking spaces).
- 8. 2004 City Policy review showing conflicts with Ocean Beach Precise Plan objective of preserving ocean views from elevated areas. These conflicts are not reported in the MND.
- ✓ 9. Geo-Technical Consultant replies to City questions regarding potential damages to adjacent properties from the dewatering required for excavating the sub-surface parking. These potential damages are not reported in the MND.
- 10. Letter from project architect to City

\* Request granting pursuant to 112.0520(d)(2)  
of SDMC

Randy Berkman

000730

- (C) *Grading and filling* are limited to the minimum amount necessary to accommodate the proposed *development*, harm to the environmental values of the floodplain is minimized including peak flow storage capacity, and *wetlands* hydrology is maintained;
- (D) The *development* neither significantly increases nor contributes to downstream bank erosion and sedimentation nor causes an increase in *flood* flow velocities or volume; and
- (E) There will be no significant adverse water quality impacts to downstream wetlands, lagoons or other *sensitive biological resources*, and the *development* is in compliance with the requirements and regulations of the National Pollution Discharge Elimination System, as implemented by the City of San Diego.
- (F) The design of the *development* incorporates the findings and recommendations of both a site specific and coastal watershed hydrologic study.

(2) All *development* that involves *fill, channelization, or other alteration* of a *Special Flood Hazard Area* is subject to the requirements for *channelization* in Section 143.0145(a)(5) and with FEMA regulations.  
(Amended 4-22-2002 by O-19051 N.S.; effective 10-8-2002.)

#### §143.0146 Supplemental Regulations for Special Flood Hazard Areas

→ All proposed *development* within a *Special Flood Hazard Area* is subject to the following requirements and all other applicable requirements and regulations of FEMA.

(a) *Development and Permit Review*

- (1) Where *base flood elevation* data has not been provided by the *Flood Insurance Study*, the City Engineer shall obtain, review, and utilize *base flood elevation* and *floodway* data available from federal or state sources, or require submittal of such data from the *applicant*. The City Engineer shall make interpretations, where needed, as to the location of the boundaries of the areas of the *Special Flood Hazard Area*, based on the best available engineering or scientific information.

(2)

# FEMA Technical Bulletin 6-93

000751

Under the NFIP, a below-grade parking garage is considered a basement if it is below grade on all sides. Therefore, the construction of below-grade parking garages is prohibited beneath residential buildings in Zones A1-A30, AE, and AH.

Section 60.3(c)(7) of the NFIP regulations deals with residential buildings in Zone AO (sheet flow with depths of 1 to 3 feet) requirements. Section 60.3(c)(7) states that a community shall:

*"Require within any AO zone on the community's FIRM that all new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified)."*

Therefore, below-grade parking garages beneath residential buildings in Zone AO are prohibited.

## Below-Grade Parking Garages in Non-Residential Buildings in A Zones

Section 60.3(c)(3) of the NFIP regulations states that a community shall:

*"Require that all new construction and substantial improvements of non-residential structures within Zones A1-A30, AE, and AH on the community's FIRM (i) have the lowest floor (including basement) elevated to or above the base flood level, or (ii) together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy."*

Below-grade parking garages are permitted beneath non-residential buildings in Zones A1-A30, AE, and AH provided the building (including the parking garage) is floodproofed to the base flood level in accordance with the design performance standards provided above in Section 60.3(c)(3)(ii). Only below-grade parking garages (in non-residential buildings) that are dry floodproofed are permitted under the NFIP. Guidance on floodproofing is provided in the FEMA manual "Floodproofing Non-Residential Structures" and in Technical Bulletin 3, "Non-Residential Floodproofing — Requirements and Certification."

Section 60.3(c)(8) of the NFIP regulations deals with non-residential buildings in Zone AO (sheet flow with depths of 1 to 3 feet) requirements. Section 60.3(c)(8) states that a community shall:

*"Require within any AO zone on the community's FIRM that all new construction and substantial improvements of nonresidential structures (i) have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or (ii) together with attendant utility and sanitary facilities be completely floodproofed to that (base flood) level to meet the floodproofing standard specified in Section 60.3(c)(3) (ii)."*

Therefore, below-grade parking garages are permitted beneath non-residential buildings in Zone AO provided the building (including the parking garage) is floodproofed to the base flood level in accordance with the design performance standards of Section 60.3(c)(3)(ii). Because of the

000752 something?  
Find the mail you sent  
yesterday or last year.  
[Learn more.](#)

3

> From: gregor.blackburn@dhs.gov  
> To: jrb223@hotmail.com  
> A community which has permitted construction in violation of their local flood damage prevention ordinance (which must meet the requirements of Vol. 44 of the Code of Federal Regulations) and having been found in violation of the NFIP would be required to remediate the violation to the maximum extent possible. If the community does not work to remediate the violation they could be put on probation or suspended from the program. If the community is in the Community Rating System--where discounts are given on flood insurance premiums--those discounts could be rescinded.  
> I can only assume that these inquiries border on leaving the hypothetical. Know you of such a structure?

> -----  
> Gregor  
> (510) 627-7186

> From: Randy Berkman [mailto:jrb223@hotmail.com]  
> Sent: Friday, March 02, 2007 8:48 AM  
> To: Blackburn, Gregor  
> Subject: RE: parking under residences in FEMA A zone/100 year floodplain  
> Dear Mr. Blackburn: I appreciate your straightforward reply. What consequences could there be to an NFIP community which knowingly approved parking under residence in a floodplain--despite being presented with the clear language of FEMA Technical Bulletin 6-93? Thank you, RB

> Subject: RE: parking under residences in FEMA A zone/100 year floodplain  
> Date: Fri, 2 Mar 2007 09:05:13 -0700  
> From: gregor.blackburn@dhs.gov  
> To: jrb223@hotmail.com  
> CC: raymond.lenaburg@dhs.gov  
> Dear Mr. Berkman:  
> Mr. Ray Lenaburg forwarded your e-mail to me for a reply.  
> The provisions of Technical Bulletin 6-93 are explicit. The National Flood Insurance Program regulations strictly prohibit the placement of below-grade parking garages under residential structures. If I can be of further assistance or if you have more questions you may contact me by phone or e-mail.

> -----  
> Gregor P. Blackburn, CFM  
> Senior Natural Hazards Program Specialist  
> National Flood Insurance Program  
> DHS-FEMA, Region IX  
> 1111 Broadway Street, Suite 1200  
> Oakland, CA 94607  
> (510) 627-7186 voice  
> (510) 627-7147 fax

> From: Randy Berkman [mailto:jrb223@hotmail.com]  
> Sent: Thursday, March 01, 2007 12:04 PM  
> To: Lenaburg, Raymond  
> Subject: parking under residences in FEMA A zone/100 year floodplain  
> Dear Mr. Lenaburg:  
> FEMA Technical Bulletin 6-93 (Requirements for underground parking in SFHA) states on p. 2 that  
> parking under residents in a floodplain is "prohibited." Is it possible under NFIP regulations to get a waiver from that? Or is this a strict prohibition?  
> thank you, RB

> -----  
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[wx\\_action=create&wx\\_url=/friends.aspx&mkt=en-us](http://spaces.live.com/spacesapi.aspx?wx_action=create&wx_url=/friends.aspx&mkt=en-us)

④  
000753

§ 60.6

depending upon the geologic, hydrologic, topographic and climatic characteristics of the community's land. The buffer may be used for suitable open space purposes, such as for agricultural, forestry, outdoor recreation and wildlife habitat areas, and for other activities using temporary and portable structures only.

[41 FR 46975, Oct. 26, 1976. Redesignated at 44 FR 31177, May 31, 1979, as amended at 48 FR 44552, Sept. 29, 1983; 49 FR 4751, Feb. 8, 1984]

§ 60.6 Variances and exceptions.

(a) The Administrator does not set forth absolute criteria for granting variances from the criteria set forth in §§ 60.3, 60.4, and 60.5. The issuance of a variance is for flood plain management purposes only. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a variance. The community, after examining the applicant's hardships, shall approve or disapprove a request. While the granting of variances generally is limited to a lot size less than one-half acre (as set forth in paragraph (a)(2) of this section), deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. The Administrator may review a community's findings justifying the granting of variances, and if that review indicates a pattern inconsistent with the objectives of sound flood plain management, the Administrator may take appropriate action under § 59.24(b) of this subchapter. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. Procedures for the granting of variances by a community are as follows:

(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;

44 CFR Ch. I (10-1-06 Edition)

(2) Variances may be issued by a community for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the procedures of paragraphs (a) (3), (4), (5) and (6) of this section;

(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances; no

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;

(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section; and

(6) A community shall (i) maintain a record of all variance actions, including justification for their issuance, and (ii) report such variances issued in its annual or biennial report submitted to the Administrator.

(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria of paragraphs (a)(1) through (a)(4) of this section are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety. not

## Federal Emergency Management Agency, DHS

## § 60.6

(b)(1) The requirement that each flood-prone, mudslide (i.e., mudflow)-prone, and flood-related erosion prone community must adopt and submit adequate flood plain management regulations as a condition of initial and continued flood insurance eligibility is statutory and cannot be waived, and such regulations shall be adopted by a community within the time periods specified in §§60.3, 60.4 or §60.5. However, certain exceptions from the standards contained in this subpart may be permitted where the Administrator recognizes that, because of extraordinary circumstances, local conditions may render the application of certain standards the cause for severe hardship and gross inequity for a particular community. Consequently, a community proposing the adoption of flood plain management regulations which vary from the standards set forth in §§60.3, 60.4, or §60.5, shall explain in writing to the Administrator the nature and extent of and the reasons for the exception request and shall include sufficient supporting economic, environmental, topographic, hydrologic, and other scientific and technical data, and data with respect to the impact on public safety and the environment.

(2) The Administrator shall prepare a Special Environmental Clearance to determine whether the proposal for an exception under paragraph (b)(1) of this section will have significant impact on the human environment. The decision whether an Environmental Impact Statement or other environmental document will be prepared, will be made in accordance with the procedures set out in 44 CFR part 10. Ninety or more days may be required for an environmental quality clearance if the proposed exception will have significant impact on the human environment thereby requiring an EIS.

(c) A community may propose flood plain management measures which adopt standards for floodproofed residential basements below the base flood level in zones A1-30, AH, AO, and AE which are not subject to tidal flooding. Notwithstanding the requirements of paragraph (b) of this section the Administrator may approve the proposal provided that:

(1) The community has demonstrated that areas of special flood hazard in which basements will be permitted are subject to shallow and low velocity flooding and that there is adequate flood warning time to ensure that all residents are notified of impending floods. For the purposes of this paragraph flood characteristics must include:

(i) Flood depths that are five feet or less for developable lots that are contiguous to land above the base flood level and three feet or less for other lots;

(ii) Flood velocities that are five feet per second or less; and

(iii) Flood warning times that are 12 hours or greater. Flood warning times of two hours or greater may be approved if the community demonstrates that it has a flood warning system and emergency plan in operation that is adequate to ensure safe evacuation of flood plain residents.

(2) The community has adopted flood plain management measures that require that new construction and substantial improvements of residential structures with basements in zones A1-30, AH, AO, and AE shall:

(i) Be designed and built so that any basement area, together with attendant utilities and sanitary facilities below the floodproofed design level, is watertight with walls that are impermeable to the passage of water without human intervention. Basement walls shall be built with the capacity to resist hydrostatic and hydrodynamic loads and the effects of buoyancy resulting from flooding to the floodproofed design level, and shall be designed so that minimal damage will occur from floods that exceed that level. The floodproofed design level shall be an elevation one foot above the level of the base flood where the difference between the base flood and the 500-year flood is three feet or less and two feet above the level of the base flood where the difference is greater than three feet.

(ii) Have the top of the floor of any basement area no lower than five feet below the elevation of the base flood;

(iii) Have the area surrounding the structure on all sides filled to or above the elevation of the base flood. Fill

7 ft. does  
not comply

5  
000755

*THE LAW OFFICES OF DAVID STEBBINS*

4948 Voltaire St., Ste 1-A  
San Diego, CA 92107

Telephone 619-223-9440  
Facsimile 619-223-0174

TO: Laila Iskandar  
FROM: David Stebbins  
RE: Stebbins Residence, 5166 W. Pt. Loma

10/26/05

Dear Ms. Iskandar,

Here is the document we discussed. As you can see, Fema clearly provides for discretion on the community's part in granting an exception to an underground "basement" in a flood zone. The attached regulation has specific direction on what is required. Please note the following factors which mitigate in my favor;

1. I am not proposing a "basement" in the commonly used sense. The area will be used only for parking and for storage. Fema distinguishes this use in their other regulations when it comes to flood proofing.
2. If my property was a commercial property with identical characteristics I would clearly be able to have under ground parking as Fema provides regulations for flood proofing such a property.
3. The flood zone I am in was created, I believe prior to the levee; this levee now protects my property from floods which, if you look at the map, come not from the ocean, but from the river. Flooding, if any would be low velocity and shallow due to the protection of the Levee.
4. Each year the city continues to build a berm on the beach during the winter months. During the last horrific winter, the parking lot in back of my property stayed as dry as a bone.

→ If you will review the attached document, you will see that my property would obviously meet all of the other Fema criterion for a variance quite. I am willing to spend the money to flood proof the basement according to your/an engineer's instructions.

SCALE

As we discussed, I am only building a 1750 sq. foot house. If I must park above ground, this would reduce an already modest house (by anyone's standards) to a tiny house. This type of house would almost certainly be esthetically limited as it would not make sense to spend as much money on such a project. The result would be just another boxy, drab house.

With all due respect, sooner or later the City must realize that this valuable land cannot be allowed to remain a sort of Beach Ghetto. The parking is currently all done in the setbacks. Half the tenants have constructed illegal ocean view decks. All of the properties on my block are eyesores; just painting them would make them "stick out".



5 (p. 2)  
000756

*cumulative  
aspects  
at m  
1/22* → There are several large multi-story properties within one block of me. I have spoken to at least six of the other owners on my same block. They have all been supportive of my plans. They have all expressed doing the same thing if I can prove it is doable. They have all offered to send letters if it would help. Consequently, once the ball is rolling, there should be an incremental change in the block. Just because I am the first and will "stick out" does not mean that I do not conform to the specific plan. It just means I am the first!

I would like you to note that there is one owner who successfully completed a two unit condo project on Brighton with underground parking last year. He is approx 20 feet outside the flood zone. I would be surprised if the flood map is truly accurate to within 20 feet. Actually, he is only about 30 feet from the sand. As we discussed, Quigs is a commercial project that was built with underground parking using flood proofing.

So, there are some close precedents from a practical standpoint for what I propose. I am asking for a little flexibility on the part of you and your staff. I live and work in Ocean Beach. It would be a great hardship for me to have to move somewhere else in order to live in a bigger house.

→ If there are any more "project stoppers" other than the above, please bring them to my attention. If you have any other ideas please feel free to bring them to my attention as well. I am flexible. It is my hope that my home will be the start of a very exciting and pleasing revitalization of the block.

I appreciate your kind attention and help.

Sincerely,

  
David Stebbins

60757

From: Laila Iskandar  
To: Davidstebbins@cox.net  
Date: 11/4/2005 2:15:32 PM  
Subject: Re: Underground parking / PTS# 51076 / Stebbins residence

Hi David,

yes Please note the following information in response to your letter dated October 26, 2005. After receipt of your letter, I brought this project forward to Management for discussion. Management have reviewed the project and supports the staff's initial determination that City staff cannot support the request for an underground parking for the project site. As the development is taking place within the 100 Year Floodplain zone, certain standards/regulation design must be applied, and the project as presented including the request for Variance or deviation is not in compliance with City Ordinance which do not allow for construction below grade in these circumstances. As noted previously in our early assessment reports that in order for staff to support the project, applicant shall demonstrate conformance with the SDMC section §143.0146(c)(6) requirement in regard to development within a Special Flood Hazard Area and having the lowest floor, including basement, elevated at least 2 feet above the base flood elevation.

yes City staff recommends the following:

- 1) Redesign the project to meet the above requirements - Long Range Planning staff will consider supporting the project as long as the proposed structure utilizes fenestration, balconies, vertical and horizontal offsets, architectural detailing and articulation to break up the building facades and minimize bulk and scale.
- 2) Applicant may contact Fema to request a letter of Map Amendment or Map Revision. For additional information, please contact City staff person "Christy Villa" at 619-533-3455.
- 3) Applicant may consider consolidating lots to accommodate his needs.

Should you choose to continue processing, this application requires a Process 3 decision by a Hearing Officer. Under the present circumstances, staff would recommend denial of your request however, the Hearing Officer who will conduct the future hearing on this matter may approve, conditionally approve or deny the application at a noticed public hearing. The decision of the Hearing Officer may be appealed to the Planning Commission. A decision by the Planning Commission is the final decision by the City. Since the project lies within the Coastal Commission appealable area, the project may be appealed to the California Coastal Commission.

Please don't hesitate to call me if you have any questions.

Thanks-

Laila Iskandar  
Development Project Manager  
Development Services  
1222 First Ave., 5th Floor, MS 501  
San Diego, CA 92101-4506  
Phone: 619 446-5297; Fax 619 446-5499  
Email: liskandar@sandiego.gov  
Website: www.sandiego.gov

7

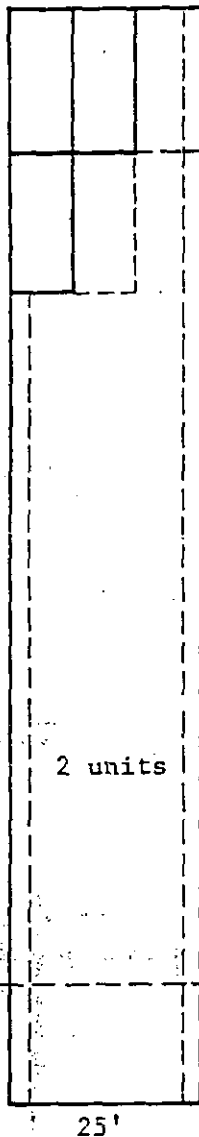
000758

# Ocean Beach Precise Plan

## OCEAN BEACH

Illustrative or typical density proposal

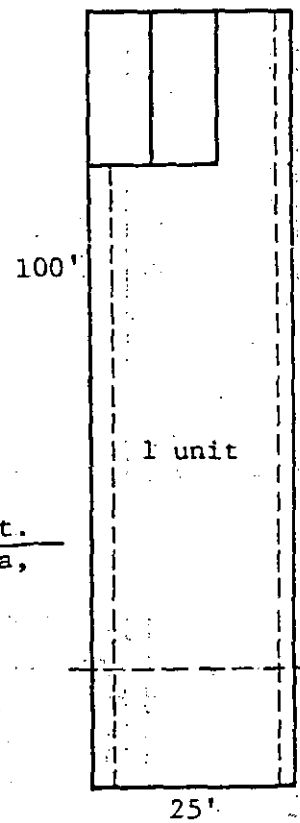
25 dwelling units/acre (one unit for every 1750 sq. ft. lot area)



### Probable development

A 2 story building,  
one unit per floor,  
1225 maximum sq. ft./  
unit,  
or  
2 units on one floor,  
having 825 sq. ft.  
each.

Steubins lot  
size



### Probable development

A 2 story unit,  
having 1750 sq. ft.  
maximum floor area,  
or  
A one story unit  
having a maximum  
of 1250 sq. ft.

FAR - .7

→ Parking - 2 spaces/unit, tandem acceptable but only w/alley access.

Yards - front - 15'

interior side - 3'

rear - 0' except as required for auto maneuverability

Height - 24' with a maximum of 2 stories

Landscaping - 20% of the total lot, 60% of the required front yard

Lot coverage - 50%

POLICY REVIEW COMMITTEE

8  
000759

DATE: 12-22-04

COMMUNITY PLAN: Ocean Beach

PLANNER: Kempton

PROJECT NAME: Stebbins residence

PTS/PROJECT NO.: 51076

PROJECT TYPE:

- ☐ CPA INITIATION  
☐ DEVELOPMENT PROJECT WITH CPA (initiation date )  
☒ DEVELOPMENT PROJECT WITHOUT CPA  
☒ POLICY ISSUE

ASSOCIATED DISCRETIONARY PERMITS: CDP

DPM: L. Iskandar

1747

PROJECT DESCRIPTION: CDP to demolish an existing one-story duplex and construct a new 2,211 sq.ft. three-story single dwelling unit on a 2,500 sq. ft. lot located at 5166 W. Point Loma Blvd., designated for medium density residential (25 du/ac) in the RM-2-4 zone. Coastal Zone appealable, Coastal Height Limit Overlay Zone, Airport Environs Overlay Zone, Airport Approach Overlay Zone.

No Public View

→ ISSUES: Bulk & scale with neighboring development plus views, light & air. The northern section of W. Point Loma has been largely redeveloped with predominately three-story structures but this section of W. Point Loma, south of Voltaire, is an enclave of sixteen one-story structures that is typical of the "small scale/historic cottages" identified in the OB Precise Plan. Scraping one of these duplexes and building a three-story residence would adversely affect the above policies, as described below.

(8) (p. 2)

## POLICY REVIEW COMMITTEE

000760

The proposal would adversely affect the following policies in the Ocean Beach Precise Plan:

"That views available from elevated areas and those adjacent to the beaches and ocean be preserved and enhanced wherever possible." Proposal would block views from elevated

areas as well as those adjacent to the beaches as proposal is on the first public ROW from the ocean. Proposal would also adversely affect the following policy: "That yards and coverage be adequate to insure provision of light and air to surrounding properties, and that those requirements be more stringent where necessary for buildings over two stories in height and for lots greater than 40' in width. " Proposal would cast shadows over neighboring

buildings/residences and impact air circulation. Because there can be no habitable space on the first floor in the flood plain the applicant is faced with building a much larger structure than the original or not receiving much benefit, in terms of FAR (from original) by building up only two stories, considering the 25% parking requirement in the RM-2-4 zone.

9

CWE Response:

It is our opinion that construction of the proposed retaining walls will not destabilize adjacent property or result in settlement of the neighboring structures. No mitigation measures are necessary.

City Comment:

6) The geotechnical consultant indicates that construction dewatering may result in settlement of adjacent property. Provide mitigation measures. Indicate if adverse effects are unavoidable.

CWE Response:

As indicated in the geotechnical report, it is our opinion that the dewatering operation might cause some minor settlement of improvements on adjacent property. We are not indicating that the dewatering operation will cause settlement but rather that it might cause settlement on adjacent properties. If it does occur, we expect it will result in only minor cosmetic distress that can be easily repaired. In addition to monitoring of improvements on adjacent property both before and after the dewatering operation, we recommended that the dewatering operation be performed on a localized basis (as practical) in order to minimize possible impacts. Specific recommendations for both monitoring and dewatering operations should be provided by the appropriate contractor.

not in  
MND

City Comment:

7) Address lateral spread and the potential for a flow slide.

CWE Response:

Based on the conditions at the site (relatively level terrain and Bay Point Formation materials at generally less than 15 feet below existing grades), it is our opinion that the potential for lateral spread and a flow slide is very low, even though there is a finite (yet undetermined) probability of such an event occurring.

City Comment:

8) Explain the significance of the site location for contributing to the low risk potential from tsunamis. Provide rationale for conclusions regarding tsunami hazard.

CWE Response:

Tsunamis are great sea waves produced by a submarine earthquake or volcanic eruption. Historically, the San Diego area has been free of tsunami-related hazards and tsunamis reaching San Diego have generally

10  
000762  
JAMES SCOTT FLEMING  
STONEBROOK STUDIO, INC ARCHITECTURE AND PLANNING

Copy to Laila Iskandar

January 15, 2006

Mr. Stephen Lindsay  
Development Services  
City of San Diego  
1222 First Avenue, San Diego, CA 92101

Re: Stebbins Residence (PTS#51076)

Dear Steve:

Per our phone conversation last week, it is my understanding that we will not be held to the five(5) foot maximum depth below flood line level for the floor of the garage as indicated in the FEMA material I sent to you. This requirement appears not to be applicable to our single project request for the basement allowance in the floodplain. Our Garage floor will be approx. 6.5 feet below the flood level of 9.6. I would like to request a quick response acknowledging this information so that we can revise our plans accordingly for resubmittal.

I also understand that if we decided to eliminate the basement garage and provide a surface parked carport instead, that even though this surface would be below the 9.6 that it would be an acceptable alternative as the parking surface is allowed at existing grade as long as the remaining living area is above the flood line level.

I look forward to your response.

Sincerely,

Scott Fleming  
Project Architect

cc: David Stebbins  
Laila Iskandar

IF No Response  
then VAF will  
not be required